Euroclear Bank - CPMI-IOSCO Disclosure Framework 2022

February 2023

Euroclear Bank
CPMI-IOSCO
Disclosure Framework 2022

Responding institution: **Euroclear Bank SA/NV**

Jurisdiction(s) **Belgium**

Authorities regulating, supervising, or overseeing the FMI: **National Bank of Belgium and Financial Services & Market Authorities**

The date of this disclosure is February 2023

This disclosure can also be found at **www.euroclear.com**

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Contents

INTRODUCTION

This document contains the disclosures relating to the CPMI-IOSCO self-assessment of Euroclear Bank, which was performed in 2022.

This document is split in three parts:

- the context and the methodology used to perform the self-assessment
- a description of the role of Euroclear Bank as an FMI in the market
- a disclosure document by Principle

The 2022 self-assessment is the result of a continuous review of all aspects of Euroclear Bank impacted by the CPMI-IOSCO Principles, taking into account progress in the action plans defined by Principle as well as incorporating changes in the environment or in the products/services offered by Euroclear Bank.

EXECUTIVE SUMMARY

Context

Euroclear Bank SA/NV (hereafter 'Euroclear Bank') is an authorised CSD under Central Securities Depositories Regulation ((EU) N°909/2014) (CSDR), with a limited purpose banking licence. CSDR follows the principles for financial market infrastructure developed by CPMI-IOSCO. Euroclear Bank monitors on an on-going basis its compliance with CSDR as well as with the CPMI-IOSCO principles.

Approach followed

The 2022 review of Euroclear Bank's compliance with CPMI-IOSCO Principles and related disclosure can be summarised as follows:

- multi-disciplinary teams have been appointed for each Principle/Key consideration to ensure a broad view from different angles
- the identified compliance gaps have been translated into detailed action plans

SUMMARY OF MAJOR CHANGES SINCE THE LAST UPDATE OF THE DISCLOSURE FRAMEWORK

This section summarises the major changes since the last disclosure published in 2020.

We have made further progress in strengthening our risk framework and continue to invest in risk management initiatives.

We have continued to strengthen our collateral valuation processes and methodologies as outlined in Principle 5.

We have expanded the use of our central bank accounts, where possible, for the settlement on links with other CSDs as well as for income and redemption payments to further mitigate credit and liquidity risks. Our liquidity testing framework has also been further reinforced.

The remainder of this document provides a comprehensive description of Euroclear Bank, including the Euroclear group dimension where relevant, and a detailed outline for each of the 21 applicable Principles. Principles 6, 14 and 24 are not applicable to Euroclear Bank.

ROLE OF EUROCLEAR BANK AS AN FMI

1. Euroclear Bank in the Euroclear group

This section provides an overview of the main entities composing the Euroclear group, the structure of ownership, the activities Euroclear pursues and the organisational structure.

Further details in this respect can be found in the annual report: (https://www.euroclear.com/investorrelations/en/annual-reports.html).

1.1 Structure of the group of CSDs

The group includes the following Central Securities Depositories (CSDs): Euroclear Bank, Euroclear Belgium, Euroclear Finland, Euroclear France, Euroclear Nederland, Euroclear Sweden and Euroclear UK & International. Euroclear Bank is the sole CSD in the group which is also authorised as a credit institution, being a CSD providing banking type ancillary services as defined in CSDR. These CSDs are referred hereafter as the operating entities of the group.

Euroclear Holding SA/NV is a financial holding company, the ultimate parent entity of the group, which indirectly owns, through Euroclear AG and Euroclear Investments, the CSDs of the group. Euroclear SA/NV is an approved financial holding company and a Support Institution established under the laws of Belgium. It is the direct parent entity of the CSDs of the group and provides system development and supports services to the CSDs and other companies of the group.

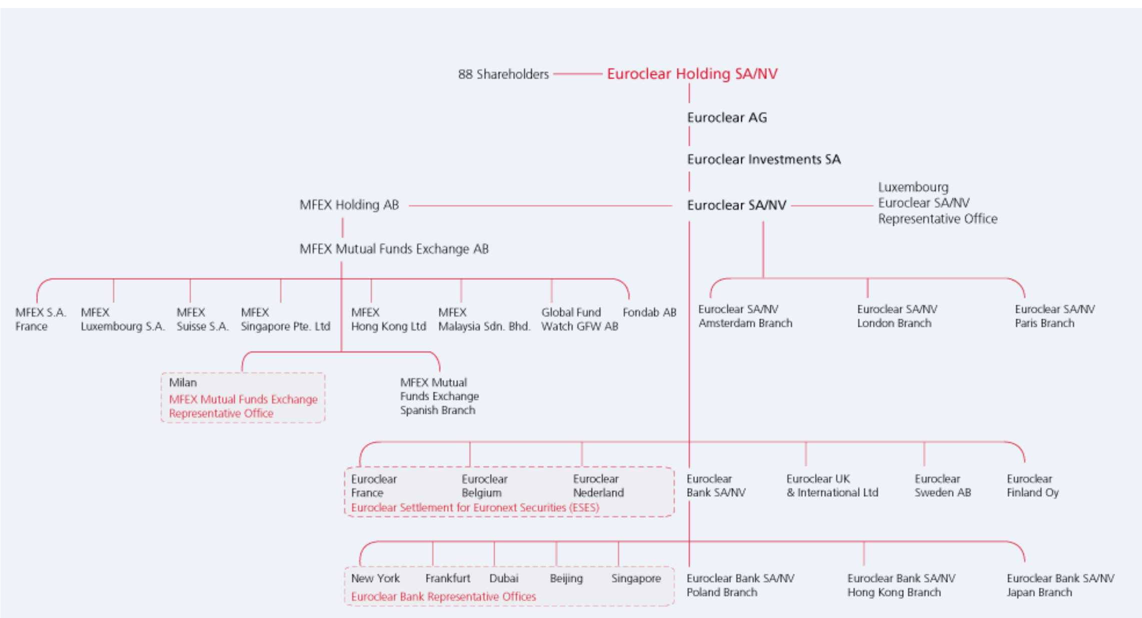

Figure 1. Simplified overview of the Euroclear (I) CSDR structure

Euroclear Holding SA/NV

Euroclear Holding SA/NV is a société anonyme incorporated under the laws of Belgium. It owns indirectly the entire issued ordinary share capital of the Euroclear CSDs.

Euroclear Holding SA/NV is the ultimate parent financial holding company in the meaning of Article 4(30) of Regulation (EU) 575/2013.

Euroclear AG

Euroclear AG is a financial holding company established under the laws of Switzerland, fully owned subsidiary of Euroclear Holding SA/NV, incorporated as part of the group restructuring performed in 2018.

Euroclear Investments SA

Euroclear Investments SA is a Belgium-based financial holding company through which Euroclear Holding SA/NV holds its investments in the various group operating entities and which provides various management and administrative services, such as engaging group insurance policies and providing real estate management, for the benefit of the group.

Euroclear Investments SA is also an issuer of capital instruments to the market to support the Group's and Euroclear Bank's financial resilience.

Euroclear SA/NV

Euroclear SA/NV is an approved financial holding company and therefore accountable for the compliance with the banking related obligations that are applicable on a consolidated basis. It is the parent company of the group CSDs. It is headquartered in Brussels and operates three branches in London, Paris and Amsterdam.

The Euroclear SA/NV Board is responsible for all shareholders matters, determination of the group's main strategic objectives and monitoring of the performance of the group as a whole.

Euroclear SA/NV has also the regulatory status of Support Institution under Belgian law. The group has indeed centralised a number of support and/or control functions within Euroclear SA/NV in order to ensure consistency across the group in delivering its objectives and create more organisational efficiency. As such, Euroclear SA/NV acts as the group service company and has contractually undertaken to provide non-operational services through outsourcing arrangements between itself and its subsidiaries, mainly the group CSDs. In view of the fact that Euroclear SA/NV offers services to FMIs (where business continuity is a key factor), it is subject to a specific regulatory status i.e., that of a Support Institution and is subject to authorisation and prudential supervision under the laws of Belgium.

Euroclear Bank SA/NV

Euroclear Bank is a Financial Market Infrastructure (FMI), a central securities depository established under the laws of Belgium and authorised under CSDR. Euroclear Bank operates a securities settlement system also governed by Belgian law and provides a range of CSD services to its Participants. Euroclear Bank is also authorised as a credit institution (with a limited purpose license) to provide limited banking services that support its CSD services, among which DvP model 1 settlement.

Euroclear Bank currently has opened several branches (Hong Kong, Krakow, Tokyo) and representative offices (Beijing, Dubai, Frankfurt, New-York, Singapore) which provide operational and client relationship support to Euroclear Bank headquarters in Brussels. The Euroclear Bank branches and representative offices do not have clients and do not open separate accounts.

Other CSDs

In addition to Euroclear Bank, six other Euroclear CSDs are established in the UK, Sweden, Finland, France, Belgium and the Netherlands.

Euroclear Global Collateral Ltd

Euroclear Global Collateral Ltd (GlobalCollateral), a UK-based service company, offers global information, recordkeeping and processing services to support market Participants in meeting their risk management and regulatory requirements relating to margin and collateral activities. Activities of GlobalCollateral are part of the Euroclear strategy for collateral management services (including collateral mobilisation).

2. Euroclear Bank’s business model and risk profile

The primary role of Euroclear Bank is to provide a safe, efficient and cost-effective operational environment within the markets it has links with and for the financial institutions it serves.

Euroclear Bank is increasing focus on expanding its global reach by seeking growth opportunities in both America and the Asia-Pacific regions, to support the growth and stability of the regions’ markets. In recent years, a number of banks added Euroclear eligibility as a criterium for inclusion in their emerging market bond indices, further illustrating the strength of the Euroclear global franchise.

Given the business model, operational risk is one of the most important risk categories inherent in Euroclear Bank and more generally in all Euroclear operating entities, while credit and liquidity risks arise mostly from Euroclear Bank’s limited banking services provided to support settlement and other CSD activities. These last two risks have become an area of focus in the recent years.

Strategic risk is also high on the agenda as markets can undergo changes that could invalidate the business model and impair the capability of the group to implement its strategic initiatives, for example, as a result of crises, regulatory changes or, on a medium to long term, disruption due to technology and innovation.

3. Euroclear Bank's main activities

The following sub-sections provide a more in-depth description of the services offered by Euroclear Bank and qualified under CSDR as core services, banking-type ancillary services and non-banking type ancillary services.

3.1 Core CSD activities

Euroclear Bank provides core CSD activities, namely securities settlement, notary services and central maintenance.

Securities settlement services

Euroclear Bank offers settlement services on a full range of internationally traded securities, including debt instruments, equities, convertibles, warrants, investment funds units/shares, exchange-traded funds (ETFs), money market instruments (MMIs) and depositary receipts, eligible for transfer and settlement against payment (DvP) in various currencies (46 currencies accepted) or free of payment (FoP). The Euroclear System is a Model 1 DvP system.

Notary services

Notary services are defined as the initial admission and/or establishment of certificated or dematerialised securities in book entry form. The definition refers to the initial representation and subsequent maintenance of securities in book-entry form through initial credit and subsequent credits or debits to securities accounts.

Securities issuances (or a portion thereof) are usually deposited into a CSD that is responsible for ensuring that the number of securities initially created equals the total number of securities in circulation (booked in investors' accounts) at any time. This activity is referred to as Issuer CSD activity.

Central maintenance

Central maintenance services consist in providing and maintaining securities accounts at the top-tier level, including for example the processing of corporate actions such as dividend and interest payments or voting rights in the case of shares. This activity is also referred to as Issuer CSD activity (it is typically the case when another type of entity, e.g. a registrar, ensures the notary function).

3.2 Banking-type ancillary activities

Euroclear Bank, as a credit institution, provides banking services in multi-currency commercial bank money to support the core and ancillary services offered in the Euroclear System.

Money transfer services

Money transfer services aim at supporting Participants' cash management activities in relation to securities settlement and asset servicing. Money settlement in any of the 46 currencies accepted by the Euroclear System is carried out in the books of Euroclear Bank itself in commercial bank money, as it is not feasible or practical that Euroclear Bank and/or its Participants open accounts at more than 47 central banks.

Euroclear Bank maintains a network of major local correspondent banks chosen for their high-quality service and creditworthiness that provide Euroclear Bank with access to the national cash clearing systems.

Credit management

Euroclear Bank offers multi-currency intraday credit facilities to borrowing Participants on an uncommitted basis within a predefined credit framework, aiming at ensuring credit granted stays within the available liquidity capacity, to facilitate securities settlement and other services available to Participants in the Euroclear System.

Such credit extensions, which create operating exposure, can occur when (i) Participants do not hold sufficient cash reserves in Euroclear Bank and/or (ii) there are structural time lags in the flow of funds as a result of time-zone/operating hours differences.

These intraday credit extensions are fully secured by collateral (i.e. cash pledged or securities) or other recourse (i.e. Letter of credit for Bridge exposures or other equivalent financial resources like excess capital vis-à-vis capital requirements for certain exposures, as prescribed by Regulation (EU) 390/2017).

Treasury management

The Treasury department combines the treasury and liquidity functions (including liquidity services provided to Participants). It manages the day-to-day flows and liquidity needs of Euroclear Bank. The Treasury department also monitors and manages the interest rate and foreign exchange risks, the balance sheet and the investment of its capital.

The Treasury department is structured around three poles:

1. Liquidity Management: mainly to support client's securities and cash settlement activity, liquidity management services for Participants and mitigate Euroclear Bank liquidity risks.
2. Asset and Liability Management: mainly to manage the balance sheet of Euroclear Bank, the investment book, foreign exchange (FX) hedging strategy, review Treasury services, set up contingency liquidity facilities and ensure compliance with regulatory requirements.
3. Agency lending/General Collateral Access (GCA): to administer the service allowing Participants to borrow securities from other Participants in order for them to adjust the collateral profile they need to deliver.

Euroclear Bank does not have a trading book.

3.3 Non-banking type ancillary activities

New issues

Euroclear Bank offers services to the issuers through their agents, lead managers as well as issuing and paying agents. These services include the initial recording of the issue in the Euroclear Bank's book-entry system, the allocation of a code for the issue and the processes to facilitate the distribution of the new issues. These services support the notary and central maintenance services provided by the institution.

Asset servicing

Asset servicing encompasses a range of services relating to the safekeeping of securities (bonds, equities and funds), the processing of corporate events, proxy voting, the payment of interests, dividends and redemptions, market claims and the administration of related tax services.

Collateral management services

Euroclear Bank offers Triparty collateral management services to Participants of the Euroclear System in support of their bilateral repurchase agreements, securities loans, secured loan facilities, derivative transactions and margining for central counterparties to further optimise their liquidity across covered markets.

Collateral management services include deal matching, collateral eligibility verification and selection, delivery against or free of payment of collateral transfer, daily mark-to-market functions, collateral substitution, margin maintenance, custody event management and reporting.

Securities lending and borrowing services (SLB)

Euroclear Bank's automated securities lending and borrowing services are designed to increase settlement efficiency. The service is an integrated component of the batch and real-time process. Participants must have credit arrangements in place with Euroclear Bank as a prerequisite to borrowing securities through the programme.

From the perspective of the borrower, the service provides a mechanism to obtain securities immediately when required for delivery if they otherwise lack such securities in Euroclear Bank. This reduces the risk of settlement failure for the borrowers and their counterparts, hence improving the overall market efficiency. From the perspective of the lender, the programme provides a mechanism to increase security yields through securities lending fees.

General Collateral Access (GCA)

General Collateral Access allows Participants to lend or borrow baskets of high quality securities in exchange for other collateral. Borrowers can access baskets of assets against other collateral, while lenders can earn revenues by lending in a highly secure environment, with Euroclear Bank bearing the full administrative burden.

Participants must have credit arrangements in place with Euroclear Bank as a prerequisite to borrowing securities through the programme. Similarly to the securities lending and borrowing services, a securities borrowing constitutes an extension of credit to a borrower, to cover the guarantee given by Euroclear Bank to the lender that it will be reimbursed or securities delivered.

Funds-order processing

Through the tailor-made automated fund order processing platform (FundSettle[1]) allowing a centralised fund distribution on a cross-border basis, Euroclear Bank provides to its clients (in their capacity as fund investors, intermediaries or distributors):

(i) order routing and processing (either subscription, redemption, switch or transfer orders)

(ii) corporate action services

(iii) real-time and customised reporting facilities on funds

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[1] *FundSettle is the dedicated fund service of Euroclear which supports both the buy and sell sides of fund distribution, providing automated order routing, settlement and asset servicing.*

Glossary

AIFs	Alternative Investment Funds
AM	Assurance Map
AMA	Advanced Measurement Approach (for Operational risk)
AML	Anti Money Laundering
APS	Appropriation of Pledged Securities
BCP	Business Continuity Plan
BIA	Business Impact Analysis
BIC	Bank Identifier Code
BOE	Bank of England
BSC	Balanced Scorecard (a strategic planning and management approach)
CALCO	Euroclear Bank's Credit, Asset & Liability Committee
CBFA	Commission Bancaire et Financière des Assurances (Belgian Market Authority now renamed FSMA for Financial Services & Market Authority)
CBL	Clearstream Banking S.A. in Luxembourg
CCP	Central Counterparty / Clearinghouse
CDS	Credit Default Swap
C&E	Compliance and Ethics
CeBM	Central Bank Money
CEO	Chief Executive Officer
CFP	Contingency Funding Plan
CHAPS	Clearing House Automated Payment System
CIA	Chief Internal Auditor
CISO	Chief Information Security Officer
COBiT	Control Objectives for Information and related Technology (an international standard in good-practice framework for IT Management and IT Governance)
CoI	Conflict of Interest
CRD IV	Capital Requirements Directive (An EU directive -Directive 2013/36/EU)
CRO	Chief Risk Officer
CRR	Capital Requirements Regulation (an EU regulation - Regulation (EU) No 575/2013)
CRS	Common Reporting Standard
CSD	Central Securities Depositories

CSDR	Central Securities Depositories Regulation (European Regulation 909/2014 of 23 July 2014)
CSP	Critical Service Providers
CTO	Chief Technology Officer
DC	Data Centre
DF	Disclosure Framework
DNS	Domain Name System
DTC	Depository Trust Company (a US based FMI)
DVP	Delivery Vs Payment
EB	Euroclear Bank
EBA	European Banking Authority
EBP	Extreme but plausible
EC	European Commission
ECB	European Central Bank
EIOPA	European Insurance and Occupational Pensions Authority
EMIR	European Market Infrastructure Regulation (European regulation number 648/2012)
ERM	Enterprise Risk Management
ESA	Euroclear SA/NV
ESCB	European System of Central Banks
ESMA	European Securities and Markets Authority
FATCA	Foreign Account Tax Compliance Act (US Fiscal Law)
FATF	Financial Action Task Force
FICA	Financial Internal Control Accountability
FMI	Financial Market Infrastructure
FoP	Free of Payment
FRPH	Euroclear Bank's Financial Risk Policy Handbook
FSMA	Financial Services and Market Authority
FX	Foreign Exchange
GAC	Group Admission Committee
GBCA	Group Business Continuity & Assurance
GC	General Collateral (collateral accepted by a majority of players in the repo market)
GFL	Global Family Limit
GMRA	Global Master Repurchase Agreement

GUI	Graphic User Interface
HLTLS	High-Level Test and Launch Strategy
HR	Human Resources
IA	Internal Audit
ICLAAP	Internal Capital and Liquidity Adequacy Assessment Process
ICS	Internal Control System
ICSD	International Central Securities Depository
ICT	Information and Communication Technology
IRB models	Internal Rating Based models (for creditworthiness assessment of debtors under RR/CRD)
IRM	Integrated Risk Management tool
ISAE	International Standards for Assurance Engagements
ISIN	International Security Identifier Number
ISMS	Information Security Management System
ISO	International Standardization Organization
IT	Information Technology
ITIL	Information Technology Infrastructure Library (an international standard in practices for IT service management)
KC	Key Consideration
KPI	Key Performance Indicator
KRI	Key Risk Indicator
KYC	Know-Your- Client
LCH	London Clearing House
LCMT	Liquidity Crisis Management Team
LCR	Liquidity Coverage Ratio
LD	Liquidity Dashboard
LoC	Letter of Credit
MC	Euroclear Bank's Management Committee
MiFID	Market in Financial Instruments Directive
MRM	Model Risk Management
NBB	National Bank of Belgium
NCB	National Central Banks
NFC	Nostro Flow Control (a liquidity management tool in place at Euroclear Bank)
NGC	Nominations and Governance Committee

OPs	Operating Procedures
ORBP	Operational Risk Board Policy
OTC	Over-the-Counter
PAFAs	Prearranged And highly reliable Funding Arrangements.
PAR	Positive Assurance Reporting
P&L	Profit and Loss statement
PMR	Problem Management Record
PVE	Portfolio Value Estimation
QLR	Qualified Liquidity Resource
RAF	Risk Appetite Framework
RCSA	Risk, Control and Self-Assessment
ROC	Euroclear Bank's Risk & Operating Committee
RRW	Recovery, Restructuring and orderly Wind-down plan
RTO	Recovery Time Objective
RTS	Regulatory Technical Standards
SDLS	System Development Life Cycle
S&OE	Suspension and Orderly Exit
SFA	Settlement Finality Act
SFD	EU Settlement Finality Directive 98/26/EC
SLB	Securities lending and borrowing
SOP	Standard Operating Procedures
SPOF	Single Point of Failure
SSA	Shared Services Agreement
SSS	Securities Settlement System
STP	Straight Through Processing
SVE model	Security Value Estimation model (a model used by Euroclear Bank to assess the value of collateral and the relevant haircut)
T2S	TARGET2 Securities
T&Cs	Terms and Conditions governing use of Euroclear
UCITS	Undertakings for Collective Investment in Transferable Securities

Principle 1: Legal basis

An FMI should have a well-founded, clear, transparent, and enforceable legal basis for each material aspect of its activities in all relevant jurisdictions.

Key consideration (KC) 1: The legal basis should provide a high degree of certainty for each material aspect of an FMI's activities in all relevant jurisdictions.

Euroclear Bank is supervised by the NBB, competent authority, as a credit institution pursuant to the Law of 25 April 2014 on the legal status and supervision of credit institutions and stockbroking firms (the 'Banking Law') and the Law of 22 February 1998 establishing the organic statute of the National Bank of Belgium (NBB) (the 'Organic Law').

Euroclear Bank has obtained a license under Regulation (EU) 909/2014 of the European Parliament and Council of 23 July 2014 on improving securities settlement in the European Union and on central securities depositories ('CSDR'). Euroclear Bank also has the status of settlement institution under Royal Decree n°62 on the deposit of fungible financial instruments and the settlement of transactions involving such instruments.

Pursuant to article 45 of the Law of 2 August 2002, Euroclear Bank is also subject to supervision by the Financial Services and Market Authority (FSMA) for matters which fall within the competences of the FSMA.

In addition, the NBB has designated Euroclear Bank as a domestic systemically important institution (referred to in the Capital Requirements Directive (CRD IV) as "*other systemically important institution*" or "*O-SII*") under Belgian banking law and CRD IV.

The Euroclear System, operated by Euroclear Bank, is also overseen by the NBB in accordance with Article 8 of its Organic Law.

The **material aspects** for Euroclear Bank's activities that require a high degree of legal certainty are:

- asset protection – the protection of the holdings in financial instruments of the Participants in the books of Euroclear Bank as well as in the books of its local depositories and local central securities depositories
- dematerialisation and immobilisation – legal basis for dematerialisation or immobilisation of securities
- finality – the settlement finality of securities and cash transfers
- collateral – the framework covering the guarantees (i.e. financial security interests) received from the Participants to secure the credit lines granted by Euroclear Bank and that are ancillary to its services of central securities depository in the meaning of CSDR
- contractual framework, rules and procedures – the material aspects of the services and activities of Euroclear Bank

- default procedures – the rules concerning default situations. Please refer to Principle 13 for this aspect

The relevant jurisdictions for Euroclear Bank's activities are:

- Belgium: Belgium is the place of incorporation of Euroclear Bank, and where the securities settlement system (Euroclear System) it operates is located[2]
- jurisdictions where financial instruments are held through links, from an asset protection point of view
- the actual location or place of incorporation of Participants in case of insolvency or resolution proceedings affecting those Participants
- jurisdictions which are elected as governing law of certain agreements
- those jurisdictions under which laws securities admitted in Euroclear Bank as issuer CSD are governed

Asset protection

Belgian Law

- The Belgian legislation provides for a clear and sound basis for admission and book-entry transfers of immobilised, dematerialised or registered securities, regardless of whether or not those are governed by Belgian law. Securities are held and transferred in the Euroclear System via book-entry, under various (but similar) regimes of fungibility, depending on the nature of the securities (Royal Decree 62 on the Deposit of Fungible Financial Instruments and the Settlement of Transactions involving such Instruments, Law of 2 January 1991 on the market in public debt securities and monetary policy instruments, Law of 22 July 1991 on commercial paper and certificates of deposit, and the Belgian Companies code).
- Royal Decree 62 and the other relevant pieces of legislation referred to above provide for a two-tier structure of asset protection, benefiting to the Participants to the Euroclear System and their underlying clients. The financial instruments held with Euroclear Bank are protected against both the insolvency of Euroclear Bank and of its Participants.
- By virtue of the above legislation, the securities deposited with Euroclear Bank never become part of the estate of Euroclear Bank and cannot be claimed by its creditors: the Participants of Euroclear Bank are given by law a co-ownership right of an intangible nature on a pool of book-entry securities of the same category held by Euroclear Bank on behalf of all its Participants holding securities of that category. The Participants holding securities in the Euroclear System retain ownership on such securities, which implies they retain (i) 'in rem' rights on the securities, i.e. a right of 'revindication' of the relevant quantity of securities deposited in case of an insolvency event or bankruptcy affecting Euroclear Bank, and (ii) voting rights.

[2] *Euroclear Bank has set up branches in Poland, Hong Kong and Japan. The securities settlement system is located in Belgium.*

- Such asset protection regime does not apply to cash deposits where Euroclear Bank becomes the legal owner of the cash deposited with it and the depositor retains only an unsecured contractual claim against Euroclear Bank.
- Besides, securities and cash held with Euroclear Bank are by virtue of law immune from attachment by creditors of account holders and any third party.
- More details are available in Rights of Participants to securities deposited in the Euroclear System which is published on my.euroclear.com.

Other jurisdictions

- Before opening links with other Central Securities Depositories (CSDs) or holding securities in the context of FundSettle, Euroclear Bank performs an initial verification of the local legislation to ensure that securities held with such CSDs/fund issuer (agent) benefit from a level of asset protection that has comparable effects to the Belgian regime. A review of the local legislation is performed periodically.
- The legal opinions notably address the following legal issues:
  - the entitlement to the securities (law applicable to proprietary aspects, nature of the rights on the securities, permissibility of an attachment or freeze of the securities)
  - the impact of insolvency proceedings and of crisis measures (e.g. recovery or resolution) affecting the intermediaries used by Euroclear Bank and/or the local CSD (segregation aspects, settlement finality, procedures and deadlines to claim the securities)

Dematerialisation and immobilisation

Article 3 of CSDR imposes an obligation on issuers established in the EEA to arrange for securities admitted to trading or traded on trading venues to be issued in dematerialised form or immobilised.

In Belgium, the immobilisation of securities is also governed by Royal Decree 62 which provides for the possibility to hold securities with Euroclear Bank on a fungible basis and for a circulation of those securities via book-entry with a related asset protection regime (see above).

The dematerialisation of securities governed by Belgian law is implemented through laws of 2 January 1991, 22 July 1991 and 14 December 2005. The law prohibits physical deliveries on the Belgian territory, except when made between professionals and for immobilisation purposes.

Finality

Settlement finality is governed by the EU Settlement Finality Directive (SFD) 98/26/EC which is implemented into the Belgian Settlement Finality law of 28 April 1999. This legislation effectively ensures irrevocability and finality of transfer orders executed in a securities settlement system (‘System”). The Euroclear System, operated by Euroclear Bank, is designated as a ‘System’ under Belgian law.

In case of insolvency proceedings affecting a Participant to the System, the law refers to the rules of the System to determine the moment of:

(i) entry of transfer orders in such System
(ii) irrevocability of transfer orders (if any such moment is determined)
(iii) finality of transfer orders executed by the System. The finality rules of the Euroclear System are set out in the *Terms and Conditions governing use of Euroclear* and in the *Operating Procedures of the Euroclear System,* which detail the three moments mentioned here above. The typology of Participants and the access criteria to the Euroclear System are set out in the *Operating Procedures of the Euroclear System*

For securities held through links with foreign CSDs (directly or through an intermediary), the laws that are applicable to the foreign CSD apply to the local settlement of operations concerning these securities. The contractual framework of the Euroclear System explains how local laws impact cross-border settlement and settlement finality.

Collateral

Collateral arrangements are governed by the Belgian Law of 15 December 2004, implementing the Financial Collateral Directive (The Belgian Collateral law), and the Belgian Settlement Finality Law. Together these laws effectively ensure the creation and perfection of financial security interests by Euroclear Bank.

Euroclear Bank obtains legal opinions ('Collateral Survey') on jurisdictions where Participants having credit lines secured by collateral arrangements to the benefit of Euroclear Bank are located. The opinions aim at confirming that:

(i) the Private International Law rules of those jurisdictions recognise that Belgian law governs the validity and enforceability of security interests granted to Euroclear Bank
(ii) the underlying securities in those jurisdictions would not be subject to any successful attachment or other encumbrance by or in favour of any adverse claimant. A periodic review of these opinions is performed

Contractual framework

Please refer to KC 2 below.

Default procedures

Please refer to Principle 13.

Key consideration (KC) 2: An FMI should have rules, procedures, and contracts that are clear, understandable, and consistent with relevant laws and regulations.

All rules and procedures of Euroclear Bank, when relevant to its Participants, are embedded in Euroclear Bank's contractual documentation. The main contractual documentation of Euroclear Bank consists of the *Terms and Conditions governing use of Euroclear* supplemented by the *Operating Procedures of the Euroclear System*. Both documents are governed by Belgian law.

The credit facilities granted by Euroclear Bank are documented via specific agreements, governed by New York law (or Belgian law in certain cases).

The securities lending arrangements of the Euroclear System are documented via supplementary contractual documentation, part of which is governed by Belgian law, the other part being governed by New York law.

The collateral agreements and the general pledge provision documented in the *Operating Procedures of the Euroclear System* are governed by Belgian law.

The collateral management services are documented via specific contractual agreements which are governed by English law.

While in general, Euroclear Bank does not have direct contractual relations with issuers, Euroclear Bank signs specific agreements with issuers for securities issued under the New Safekeeping Structure (NSS) or New Global Note (NGN) (Issuer-ICSD Agreements), which clearly set out the obligations of such issuers and the ICSDs in that regard.

The consistency of the contractual framework with applicable law is ensured by scrutiny exercised by in-house lawyers and by legal opinions obtained on specific aspects, on an ad hoc basis.

Euroclear Bank ensures that the contractual documentation is clear and understandable by:

- designing a clear contractual structure where the hierarchy and purposes of each document is unambiguous
- documenting legal and operational information in different and clearly distinguished parts of the documentation allowing to keep the documents clear for the targeted audience
- drafting legal aspects of the documentation according to professional legal drafting standards, such as Euroclear's 'Tone-of-Voice' principles
- incorporating feedback from external and internal stakeholders as much as possible to enhance the clarity of such documents

The contractual documentation of Euroclear Bank is subject to its standard internal governance and approved by the Euroclear Bank Management Committee and/or Board as the case may be. There is no formal regulatory approval process for Euroclear Bank's contractual documentation.

Key consideration (KC) 3: An FMI should be able to articulate the legal basis for its activities to relevant authorities, clients, and, where relevant, client's customers, in a clear and understandable way.

The legal basis for the activity of Euroclear Bank is essentially articulated in the following documents:

- the *Terms and Conditions governing use of Euroclear* and *Operating Procedures of the Euroclear System* and other related contractual agreements (please refer to KC 2)
- the *Rights of Participants to securities deposited in the Euroclear System*

All these documents (as well as other relevant documents) are publicly available on my.euroclear.com.

Concerning the fact that the legal basis is disclosed in a clear and understandable way, please see KC 2.

Key consideration (KC) 4: An FMI should have rules, procedures, and contracts that are enforceable in all relevant jurisdictions. There should be a high degree of certainty that actions taken by the FMI under such rules and procedures will not be voided, reversed, or subject to stays.

Most aspects have already been covered in KC 1 and 2.

Euroclear Bank operates a Securities Settlement System and Article 280 §2 of the Belgian Banking Law of 25 April 2014 provides that resolution proceedings do not affect the rights and obligations linked to participation in Securities Settlement System.

In the Collateral Surveys, Euroclear Bank assesses the risks resulting from insolvency proceedings affecting a Participant on the security interest securing the credit facilities granted by Euroclear Bank. Further to the implementation of crisis measures in certain jurisdictions, Euroclear Bank also assesses the risks resulting from resolution measures affecting a Participant on the security interests securing the credit facilities granted by Euroclear Bank. In particular, Euroclear Bank assesses whether stays on enforcement of security interests may be applied, and whether the relevant provisions of its contractual documentation are enforceable in insolvency situations.

Key consideration (KC) 5: An FMI conducting business in multiple jurisdictions should identify and mitigate the risks arising from any potential conflict of laws across jurisdictions.

Euroclear Bank carries out its activities in Belgium and, consequently, its rights and obligations are governed by Belgian law. However, conflict of laws issues may arise in some cases:

- when Euroclear Bank holds securities via links (or in the context of FundSettle) in other jurisdictions: it then obtains legal opinion on specific aspects (please refer to KC 1 under Asset Protection above)
- when Euroclear Bank accepts foreign securities as issuer CSD: Euroclear Bank performs an assessment of measures under Article 23 of CSDR to complement Euroclear Bank's eligibility review of new securities issuances
- when insolvency proceedings are opened against a foreign Participant and Euroclear Bank has granted secured credit to this Participant: the granting of collateral is governed by Belgian law. Euroclear Bank nonetheless ensures that foreign law applicable to the Participants does not impose restrictions or additional formalities. Such foreign law conditions are identified by a recurrent Collateral Survey (see above)
- Euroclear Bank has branches in Poland (Krakow), Hong Kong and Japan[3] (Tokyo) to which relationship management and/or operational activities are transferred; and representative offices in several other jurisdictions (Beijing, Dubai, Frankfurt, Singapore and New York) which only perform general representative activities for Euroclear Bank. Euroclear Bank has opinions for its branches confirming that the holding and transfer of securities in the Euroclear System remain governed by Belgian law. Euroclear Bank also monitors that the limited activities of its branches and representative offices remain compliant with the local regulations

[3] *Euroclear Bank's Japan Branch is authorised to conduct foreign bank agency services under the Japanese Banking Act*.

Principle 2: Governance

An FMI should have governance arrangements that are clear and transparent, promote the safety and efficiency of the FMI, and support the stability of the broader financial system, other relevant public interest considerations, and the objectives of relevant stakeholders.

Key consideration (KC) 1: An FMI should have objectives that place a high priority on the safety and efficiency of the FMI and explicitly support financial stability and other relevant public interest considerations.

According to the Articles of Association of Euroclear Bank, the object (i.e. purpose) of the company is to carry out for its own account and for the account of third parties, banking activities and securities-related activities in their broadest meaning.

In this context, Euroclear Bank operates a Securities Settlement System (SSS) and is licensed as a credit institution allowing it to act as settlement agent of this SSS and to grant credit to Participants of the SSS. Euroclear Bank offers a broad range of services: asset servicing, collateral management, securities lending and borrowing and establishment of links for the purpose of cross-border settlement of transactions. The banking services are directly related to the operation of the securities settlement system.

Euroclear's Corporate Strategy starts from its company's purpose: "*We innovate to bring safety, efficiency and connections to financial markets for sustainable economic growth*" and guides our strategic direction towards 2026 and beyond. One of the key enablers of Euroclear's five-year 'diamond strategy' is to integrate ESG into existing products across the value chain to help reduce reporting workload and facilitate standardisation for issuers and investors.

ESG strategy and risk management require a consolidated, group-wide alignment and coordination within the Euroclear group in line with Euroclear SA's expectations as parent company and in accordance with regulatory requirements. To ensure coherence and alignment with the Euroclear's group approach and governance set-up, the Euroclear Bank Board of Directors equally opted for an integrated governance approach to ESG, by (further) embedding ESG in their existing governance structure and with due consideration for the overall group framework.

The ESG report produced on a yearly basis refers to the Board Governance. The composition of a Board of a Euroclear company takes into account the individual suitability elements, the individual and collective skill, knowledge and experience elements, diversity aspects, and the need of a balance between independent directors, shareholders' representatives and executive representation. Below we emphasise a number of specific board governance aspects, in particular, our approach to the suitability of Directors and the process for electing Board members, our diversity policy in this respect, the process for induction and training of Board members and the process for dealing with conflicts of interest.

Each Euroclear company has a policy promoting diversity of the Board including at least the following elements:

- a target of a minimum one third representation of the under-represented gender on its Board
- a reference to the different diversity aspects: educational and professional background, gender, age and, as necessary (depending on the span of the activity of the company) and permitted by law, geographical provenance
- at least annually the structure, size, composition, diversity aspects (including representation of the underrepresented gender) and performance of the Board and Board committees is reviewed and recommendations to the Board are made in this regard

Senior Management proposes a framework of strategic objectives, consistent with Euroclear Bank's strategy and legal and regulatory obligations, which are approved yearly by the Euroclear Bank Board and reviewed semi-annually. Euroclear Bank Strategic objectives must be consistent with Euroclear Group strategic objectives.

The Euroclear Bank Board, supported by the Euroclear Bank Management Committee, defines a robust Risk Appetite Framework to support the achievement of Euroclear's strategic objectives.

For 2022, the Euroclear Bank objectives focused on the following areas:

- Being a Great Place to work
- Growing profit in a Sustainable and Responsible way
- Being a Preferred Business Partner
- Being a Trusted FMI

The Chief Executive Officer (CEO) and the Management Committee, as a collegiate body, ensure that the objectives are met and that the performance is measured regularly during the year and semi-annually by the Board.

The 2022 operational and non-operational objectives focused specifically on enhancing Euroclear's role as a leading financial market infrastructure with regards to stability and security. This is further substantiated in corporate objectives, which include remaining a preferred business partner and trusted FMI, among other things by strengthening its IT, cyber security and business resilience. Contributing to the embedding of ESG in its multiple dimensions will be a key component of the objective of being a preferred business partner.

The Euroclear Bank objectives, to the extent they focus on the activities performed in Euroclear Bank (i.e. not outsourced), are cascaded down to all relevant Euroclear Bank divisions and include detailed operational performance objectives.

Euroclear Bank outsources a number of services to its parent company, Euroclear SA/NV (ESA), which acts as the group service provider. The arrangements for the provision of shared services by ESA are documented in the Shared Services Agreement (SSA) and monitored in a plan (Service Delivery Plan) which is reviewed yearly. Services centralised in ESA include Technology Services, Risk Management, Internal Audit, Finance, Legal, Corporate Secretariat, IT Commercial, Group Strategy and Expansion (including Data Services and Innovation), HR, Communications and Sustainability Office Regulatory, Compliance and Public Affairs.

On an annual basis, the Euroclear Bank Management Committee sets qualitative and quantitative targets and specific Key Performance Indicators (KPIs) for the provision of the above services, including, targets for the availability and performance of Euroclear Bank's operational systems. These KPIs include detailed systems performance and availability applicable to the IT divisions, which are part of Euroclear Bank's operational reliability objectives.

Agreed KPIs are assessed quarterly by the *Euroclear Bank's Risk & Operating Committee* (ROC) and by the Management Committee and are reported semi-annually to the Audit Committee and Remuneration Committee

Key consideration (KC) 2: An FMI should have documented governance arrangements that provide clear and direct lines of responsibility and accountability. These arrangements should be disclosed to owners, relevant authorities, clients, and, at a more general level, the public.

The Euroclear Bank Board of Directors defines and supervises the general policy and strategy of Euroclear Bank and has the power to carry out all acts that are explicitly reserved by law to the Euroclear Bank Board.

The Euroclear Bank Board has established a number of advisory committees which provide guidance and advice on specific matters, as listed in the terms of reference of each Board committee (i.e. Audit, Risk, Remuneration and Nominations & Governance committees).

The Euroclear Bank Management Committee has been entrusted, by law, with the general management of Euroclear Bank with the exception of i) the determination of the strategy and general policy of Euroclear Bank and ii) the powers reserved to the Euroclear Bank Board by law or the Articles of Association. Furthermore, a User Committee has been set up and provides independent advice to the Euroclear Bank Board, on key arrangements that impact the Euroclear Bank users. The Euroclear Bank User Committee is composed of representatives of Participants and issuers in Euroclear Bank (see Principle 21 for more details).

The governance arrangements of Euroclear Bank are documented through the following documents:

- *Governance Charter* which describes the overall governance framework of Euroclear Bank and interaction with its mother company
- *Articles of Association*: the articles of Association describe the Object, Capital, Administration & Supervision, the General Meeting, Annual Accounts and Winding-up procedures of Euroclear Bank

- *Board Terms of Reference*: these Terms of Reference describe the composition, the functioning and the responsibilities and powers of the Board of directors
- *Audit-, Risk-, Remuneration-, Nominations & Governance Committees Terms of Reference*: the Terms of Reference of each Board advisory committee describe the composition, the functioning and the responsibilities of such committee
- *Management Committee Terms of Reference*: these Terms of Reference describe the composition, the functioning and the responsibilities of the Management Committee
- *User Committee Terms of Reference and Standard Operating Procedures (SOP)*: these Terms of Reference and SOP describe the composition, the functioning and the responsibilities and powers of the Euroclear Bank User Committee
- Some matters such as, among others, Group Strategic Objectives, Financial Policy Objectives, Corporate Risk management and Group governance framework are decided at the level of the parent of Euroclear Bank. They have been designed in compliance with relevant laws and regulations

Euroclear Bank's governance requirements are set out in Belgian and European Union legal and regulatory requirements and recommendations and other related matters.

Disclosure and accountability

Euroclear Bank is a limited liability company and a subsidiary of ESA. Euroclear Bank is accountable to its shareholders and to its supervisory authorities.

Euroclear Bank makes relevant information to its stakeholders public via different channels.

In addition to all publications in the Belgian State Gazette and in the financial/national newspapers pursuant to law requirements, Euroclear Bank makes the following data available to the owners, Participants and the public:

- Governance Charter which describes the overall governance framework of Euroclear Bank and interaction with its mother company. This document is posted on www.euroclear.com
- www.euroclear.com provides information on Euroclear governance, activities and services, operating rules for each entity including Euroclear Bank, as well as business developments, press releases and annual reports
- The Euroclear Bank stand-alone financial statements (including, for the annual accounts, the Board of Directors annual report) are posted on the Euroclear website and provide information including but not limited to financials, group strategy and corporate governance within the Group
- The Euroclear Bank CPMI-IOSCO Disclosure framework, the Euroclear Bank ISAE 3402 and the Pillar III reports are also posted on my.euroclear.com

From time to time, media releases, corporate brochures, and other documents are also made available to Participants and other financial market players and the broader public.

Key consideration (KC) 3: The roles and responsibilities of an FMI's board of directors (or equivalent) should be clearly specified, and there should be documented procedures for its functioning, including procedures to identify, address, and manage member conflicts of interest. The board should review both its overall performance and the performance of its individual board members regularly.

Roles and responsibilities

The Euroclear Bank Board of Directors defines and supervises the general policy and strategy of Euroclear Bank and has the power to carry out all acts that are explicitly reserved by law to the Board.

In carrying out this role, each Board member acts in good faith in the way they consider would be most likely to promote the success of Euroclear Bank for the benefit of its shareholders as a whole, while having due regard to the interests of other stakeholders (e.g. customers, employees, and suppliers) and to public interest as well. The Board also has regard to the interests of the Euroclear group, provided the proper balance is reached between the financial charges imposed on Euroclear Bank and the eventual benefit to Euroclear Bank.

The primary responsibilities of the Board are to define and oversee the implementation of the strategy and objectives of the Company, its risk framework (including risk appetite and policies) and to supervise Euroclear Bank's management.

In defining the strategy of Euroclear Bank, the Euroclear Bank Board handles any individual strategic matters as and when they arise.

The Management Committee reports to the Board on the implementation of the agreed strategy, risk profile and financial position of the Company and all other matters delegated by law and the Board to the Management Committee.

The level of control over the Management Committee is assessed regularly by the Board as a whole as part of the Board self-assessment process which covers specifically management's relationship with the Board.

The functioning and responsibilities of the Board have been defined in detail in the Articles of Association and its own Terms of Reference.

Procedures for the Board's functioning and Conflicts of Interest

The Euroclear Bank Board meets at least on a quarterly basis and may be called whenever the interest of Euroclear Bank requires it or whenever one Board member has asked for it.

The Euroclear Bank Board is composed of suitable members of sufficiently good repute with an appropriate mix of skills, experience and knowledge of the Company and of the market. Additional information on the functioning of the Board is included in the Terms of Reference, which are reviewed annually.

Euroclear Bank has adopted a comprehensive set of policies that Board members, the Management Committee and staff (including contractors) must follow in order to identify, notify, assess, properly manage and control potential and actual conflicts of interest including:

- *Euroclear Bank Board Policy on Conflicts of Interest for Board Members*
- *Euroclear Policy Handbook on Conflicts of Interest and External Mandates*
- Guidelines for categorisation, assessment and determination of management measures and controls for Conflict of Interest in Euroclear

Those policies cover both personal and corporate conflicts, with due consideration of potential intra-group conflicts resulting from the group structure and its operating model entailing multiple outsourcing arrangements. *Conflict of Interest Policy* documents require the Board, management and staff members to consider and disclose the conflicts of interest they may have personally (including via persons directly or indirectly linked to them) or when acting upon a mandate. They are also expected to take reasonable steps to avoid engagement in activities which could create a perception of impropriety or jeopardise Euroclear's integrity or reputation.

The Guidelines detail how to:

- categorise and assess the materiality of conflicts of interest identified or disclosed under the *Conflict of Interest Board Policy* or the *Conflict of Interest* and *External Mandates Policy Handbook*
- assess the effectiveness of available management measures and controls in respect of any conflicts of interest
- implement effective management measures and controls for identified and disclosed Conflict of Interest

Euroclear Bank seeks to limit the occurrence of material conflict of interest situations. Euroclear Board (Committees) composition rules form integral part of this objective.

In case of an actual permanent conflict of interest, the company will automatically apply the measures foreseen in relevant regulation (i.e. involved individuals will be excluded from the decision-making process and from the receipt of any relevant information concerning the matters affected by the permanent conflict of interest).

All potential or actual conflicts identified or disclosed in line with the *Conflict of Interest Board Policy* and the *Conflict of Interest* and *External Mandates Policy Handbook* must be recorded either in the Conflicts of Interest Inventory or Register along with the outcome of the categorisation and materiality and manageability assessments which are required by the Guidelines. Conflicts of interest, whether at the level of the Board of Directors or the Management Committee, are also reported in the Board of Directors annual report and notified to Euroclear Bank's statutory auditors.

Board Committees

To perform its responsibilities more efficiently and in line with legal and regulatory requirements, the Board has established the following committees exclusively composed of non-executive directors: the Audit Committee, the Risk Committee, the Nominations and Governance Committee and the Remuneration Committee.

The Audit Committee is an advisory committee of the Board, established to assist the Board in fulfilling its responsibilities relating to the oversight of the quality and integrity of the accounting, auditing and reporting practices of Euroclear Bank, the effectiveness of internal control systems and risk management systems, the adequacy and performance of Euroclear Bank's Internal Audit function and Compliance function, the independence, accountability and effectiveness of the External Auditor and such other duties as directed by the Board.

The Risk Committee assists the Board in fulfilling its oversight of Euroclear Bank's risk management governance structure, risk tolerance and strategy, management of key risks as well as the process for monitoring and mitigating such risks (including contingency planning, cyber security, recovery plans, board policies); and such other duties as directed by the Board.

The Nominations and Governance Committee reviews and makes recommendations to the Board in respect of nominations of the executive and non-executive directors of the Company, the composition of the Board and Board committees and corporate governance matters. It also sets a target for representation of the underrepresented gender on the Board and defines guidelines describing appropriate actions to reach this target.

The Remuneration Committee makes recommendations to the Board with respect to the total amount of remuneration and other benefits (other than those applicable to employees of the Company generally) paid by the Company to its executive Directors. It further reviews recommendations and approves the amount of annual individual remuneration of each executive director (including incentive compensation, and changes to base salary, retirement and other benefits), subject to approval by the Board of the overall amount of executive director remuneration referred to above.

The Management Committee is established by law (according to the Belgian Company Code) and is entrusted with the general management of the company with the exception of:

- the determination of the strategy and general policy of the company
- the powers reserved to the Board by law or the Articles of Association

The Management Committee acts in accordance with applicable laws and regulations and the rules set out in the Articles of Association and under the supervision of the Board.

The Management Committee reports directly to the Board on matters which fall within the remit of the Board Committees, or to the Board's specific committees which in turn report their analysis on the same to the Board.

Review of performance

The Board carries out a self-assessment and effectiveness review of the Board as a whole, the Board Chairman and the individual members. This review endeavours to ensure that the Board has the necessary framework in place within which to make decisions, focusing on the optimum mix of skills and knowledge amongst the directors, clarity of goals and processes, a culture of frankness that encourages constructive evaluation, full disclosure of procedures and an effective relationship with the Management Committee.

This annual review is carried out by completion of a questionnaire or by conducting interviews with Board members, as decided by the Board, depending on the specific needs of the Board in the year assessed. The Board can also decide to request an independent external assessment.

The following elements are reviewed as part of the assessment process:

- the composition of the Board and the Board Committees, including its diversity and independence as defined above
- the functioning of the Board (including the training of the Directors and the relationships of the Board with the Board Committees and with the Management Committee)
- the role of the Board (including the way the strategic matters are treated by the Board and the control exercised by the Board over the Management Committee), as well as the Directors' involvement and attendance at meetings

The consolidated results of the assessment are reviewed by the Nominations and Governance Committee, and the results are reported to the Board for discussion. Concerns raised are followed up appropriately. The outcomes of the Nominations and Governance Committee and Board discussions as well as any agreed follow-up actions are recorded in minutes.

The Nominations and Governance Committee, while reviewing the Board composition as well as the list of candidates proposed for re-election at the Annual General Meeting, uses the results of the assessment as a basis for its analysis. The Chairman takes steps to ensure that any areas of weak performance in the assessment are taken up with the relevant individual Director as necessary.

The performance of the Board of Directors as a whole is also assessed by Euroclear Bank's shareholders during the Annual General Meeting, through the review of the company's annual accounts.

Key consideration (KC) 4: The board should contain suitable members with the appropriate skills and incentives to fulfil its multiple roles. This typically requires the inclusion of non-executive board member(s).

In accordance with applicable legal and regulatory requirements, Board members are appointed by the shareholders, subject to approval by the supervisory authorities. The Board submits its proposals to the shareholders regarding appointment and renewal or non-renewal of Board members.

These proposals are supported by a recommendation of the Nominations and Governance Committee which assesses the applicant director against relevant selection criteria and their availability to perform the role. All nominations are made against merit and based on the applicant director's potential contribution in terms of knowledge, experience and skills, with a view to ensuring a balanced Board which, as a whole, has the optimum mix of skills and experience to ensure the proper fulfilment of the tasks of the Board that are appropriate for the requirements of Euroclear Bank's business.

To adequately fulfil its role and responsibilities, the Board as a whole should possess the necessary balance of skills and experience to set the Euroclear Bank general policy and strategy and to properly supervise management in the implementation of such policy and strategy.

The skills that should necessarily be represented on the Board are both generic (finance, accounting, management and organisation) and specific to the Euroclear Bank business (banking, operations, securities settlement, capital markets, IT). Appointments of new Board members are made against the background of the competences required to meet Euroclear Bank's strategic objectives.

The Board of Directors is composed of the members of the Management Committee and non-executive directors. The Terms of Reference of the Board of Directors also foresee that at least one third of independent directors sit on the Board, in line with legal and regulatory requirements[4] . The names of the independent Board members are disclosed in the annual report of Euroclear Bank.

The overall membership of the Board and Board Committees is reviewed by the Nominations and Governance Committee with a view to ensuring the Board remains appropriately composed. The review is performed at each new Board appointment, in addition to an annual overall review. The main responsibilities and operating procedures of the Nominations and Governance Committee have been defined in the Committee Terms of Reference available on the Euroclear website.

External assessments are carried out periodically and internal ones yearly.

Non-executive directors who are not members of the group management receive remuneration for their mandate, taking into account their level of responsibility and time required of them in fulfilment of their Board role. It comprises an annual gross fee, an additional fee (fixed amount) for additional meetings attended and a reduction (fixed amount) for scheduled meetings not attended. Non-executive directors do not receive incentive compensation (short or long-term) or stock options or employment benefits (other than reimbursement of expenses). Their remuneration is not linked to the performance of Euroclear which incentivises the non-executive directors to focus on the long-term achievement of Euroclear Bank's objectives.

4 As from 1/1/2020, independence has been defined in accordance with the provisions of the Belgian Corporate Governance Code 2020 and taking into account the considerations of ESMA Q&A on the Implementation of the Regulation (EU) No 909/2014 on improving securities settlement in the EU and on Central Securities Depositories as well.

Key consideration (KC) 5: The roles and responsibilities of management should be clearly specified. An FMI's management should have the appropriate experience, a mix of skills, and the integrity necessary to discharge their responsibilities for the operation and risk management of the FMI.

Roles and responsibilities

The Management Committee members are appointed by the Board, subject to the relevant suitability assessments and approval of the supervisory authorities. In accordance with the relevant laws and regulation, the Management Committee is entrusted with the general management of Euroclear Bank, with the exception of:

(i) the determination of the strategy and general policy of Euroclear Bank
(ii) the powers reserved to the Board by law or the Articles of Association. The Management Committee acts in accordance with applicable law and the rules set out in the Articles of Association and its Terms of Reference and under the supervision of the Board

A CEO is appointed by the Board and is the Chair of the Management Committee. Subsequently the Management Committee delegates to the CEO the day-to-day management and the representation of the Company for such day-to-day management, consistently with the allocation of responsibilities between Management Committee members decided by the Management Committee from time to time.

The roles and objectives of the Management Committee (including the CEO) are reviewed and recommended by the Remuneration Committee and set by the Board and are evaluated during the remuneration review process (within the scope of the Articles of Association and Terms of Reference).

Experience, skills and integrity

All nominations to the Management Committee are reviewed by the Nominations and Governance Committee, in accordance with Euroclear suitability process, with a view to ensuring management has the appropriate skills and expertise to fulfil its tasks. An annual review process is in place and shared with the Nominations and Governance Committee. The nominations are made against merit and on the basis of the knowledge, experience and skills of the candidate, regardless of his/her gender or ethnic background. With respect to future potential members of the Management Committee, the Chairman of the Management Committee and the Chairman of the Board jointly propose to the Board the names of the candidates to be appointed as members of the Management Committee.

The recruitment process includes a series of interviews of the candidate, an assessment of the candidate's profile carried by reputable external consultants where appropriate as well as a check of the candidate's professional references.

In addition, the Management Committee as a whole should possess the necessary balance of skills and experience to fulfil its role and responsibilities. Management Committee members receive induction training, where relevant and can request training, as needed.

Appointment and removal of Management

The Board of Directors appoints and dismisses the members of the Management Committee.

Key consideration (KC) 6: The board should establish a clear, documented risk-management framework that includes the FMI's risk-tolerance policy, assigns responsibilities and accountability for risk decisions, and addresses decision making in crises and emergencies. Governance arrangements should ensure that the risk-management and internal control functions have sufficient authority, independence, resources, and access to the board.

Enterprise Risk Management Framework

Euroclear Bank operates a robust and documented framework for the identification, measurement, monitoring, management and reporting of all types of risks relevant for Euroclear Bank.

The Enterprise Risk Management Framework is designed by the Risk Management division, approved by the Euroclear Bank and ESA Board and implemented and operated by the first line.

The Euroclear Bank Board is committed to maintaining an overall low risk profile in line with Euroclear Bank's role as a leading financial market infrastructure with a closely guarded reputation for safety and resilience. Reflecting this, the Board has defined clear Corporate Risk Management and Operational Risk Management Board policies including a Board risk appetite statement (risk tolerance) and supporting risk strategy, for its key risks. Frequent dedicated sessions on specific risks/risks topics are handled with the Risk Committee and Board of Euroclear Bank.

Specifically for Euroclear Bank, the Enterprise Risk Management Framework has been translated and documented into the *Enterprise Risk Management Framework Policy Handbook* and is applicable to all risk types Euroclear Bank faces. The *Enterprise Risk Management Framework Policy Handbook* acts as an umbrella reference document for all other risk specific frameworks operated by Euroclear Bank, including operational risk and business continuity risk frameworks. Other policy handbooks contain topic specific information and cross-reference the *Enterprise Risk Management Framework Policy Handbook* as necessary.

Euroclear Bank's risk appetite framework is developed by the Risk Management division working in close co-operation with the Euroclear Bank Management Committee and the Euroclear Bank Board. The Euroclear Bank Board approves a set of diverse entity-level risk appetite metrics and associated limits based on risk reward analysis and in line with our strategic objectives. The Euroclear Bank Management Committee and Risk Management report to the Euroclear Bank Board on the bank's current risk profile by reference to Euroclear Bank's calibrated risk appetite metrics and limits allowing the Euroclear Bank Board to determine what actions are needed to maintain Euroclear Bank's risk profile at the desired level.

The Board has put in place a robust risk governance framework in which roles and responsibilities for managing risks are clearly defined. The Three Lines Model operated by Euroclear Bank facilitates the effective operation of the Enterprise Risk Management framework. Each line plays a distinct role providing the Management Committee and the Board with confidence that Euroclear Bank is likely to achieve its key goals through the effective management of risks. See also Principle 3, KC 1 for further information on the Enterprise Risk Management framework.

Authority and independence of the control functions

Euroclear Bank has in place independent Risk Management, Compliance & Ethics and Internal Audit functions, according to the highest applicable standards in ensuring a robust and transparent management structure and control environment.

The Risk Management, Compliance & Ethics and Internal Audit divisions are independent control functions, each with a dedicated Board-approved Charter.

There are a number of mechanisms set up to safeguard their independence:

- decisions on appointment and removal of the heads of the internal control functions are made by the Board with input from the relevant Board Risk/Audit Committee, the CEO and the Group heads as appropriate, and are subject to the approval of Euroclear Bank's regulator
- the Chief Risk Officer, the Chief Compliance Office and the Head of Audit have a direct reporting line to the Chairman of the relevant Euroclear Bank Board Risk/Audit committee
- the heads of the control functions each regularly attend closed sessions of the relevant Board Risk/Audit Committee (i.e. without executive directors present). Additionally, they each have unmediated access to the Chairman of the Euroclear Bank Board, the Board itself and members of the relevant Euroclear Bank Board Risk/Audit Committee

In addition to local resources, the Chief Risk Officer, Chief Compliance Officer and Head of Audit each have access to well-resourced Centres of Excellence equipped to provide high quality support, advice and guidance on a range of specialist subjects and availability of staff in ESA. A Shared Service Agreement is in place between ESA and Euroclear Bank governing the provision of these services to Euroclear Bank and the local control functions of Euroclear Bank.

In addition, Euroclear Bank has established a local Chief Technology Officer function, reporting to the CEO and accountable to the Euroclear Bank Board. The Euroclear Bank Chief Technology Officer oversees the implementation of the Information Technology Framework Board Policy that sets out the principles for the governance and management of the end-to-end IT environment. The Chief Technology Officer regularly reports its findings to the Euroclear Bank Management Committee and the Euroclear Bank Audit Committee. Closed sessions are also organised with the Euroclear Bank Audit Committee and the Euroclear Bank Audit Committee Chair.

Governance of Risk Management Models

Euroclear Bank has developed an effective Model Risk Management framework, aligned with the *Enterprise Risk Management Framework Policy Handbook*. The Euroclear Bank Board has ultimate responsibility for overseeing the management of model risk at Euroclear Bank.

The Management Committee develops and proposes to the Euroclear Bank Board appropriate model risk management arrangements - including risk appetite - that comply with laws, regulations and internal policies. This is achieved primarily through implementation and effective operation of Euroclear Bank's Model Risk Management Framework.

The Management Committee regularly reports to the Euroclear Bank Board Risk Committee on significant model risk and on compliance with this framework and arbitrates on issues reported by the Euroclear Bank Credit Asset and Liability Committee (CALCO) or Euroclear Bank ROC.

Annually, Euroclear Bank's independent model validator function[5] provides an overview of key model validation issues, including Internal Rating Based model (IRB) and the operational risk (AMA) model, to the Euroclear Bank Board Risk Committee to facilitate effective oversight.

Crisis management

The Euroclear Bank Risk Management Framework also includes crisis management and incident escalation, to ensure that when a significant incident/crisis occurs, it is escalated rapidly to the appropriate governance bodies and appropriate measures are taken at the right level. Euroclear Bank's Business Continuity Management framework describes roles and responsibilities, and the adopted approach.

The Risk Appetite Framework lays down roles and responsibilities and escalation mechanisms in case of risk appetite limit breaches.

For incidents, Euroclear Bank uses different levels of escalation depending on the severity of the incident (crisis). Each significant incident is assessed in terms of its (potential) impact on Euroclear Bank's activities or the wider market (systemic risk).

Moreover, in accordance with legal requirements, Euroclear Bank's Business Continuity Management framework describes roles and responsibilities, and the adopted approach. It also includes objectives supporting the business targets for the timely resumption of critical operations. See Principle 17 for more details.

Key consideration (KC) 7: The board should ensure that the FMI's design, rules, overall strategy and major decisions reflect appropriately the legitimate interests of its direct and indirect clients and other relevant stakeholders. Major decisions should be clearly disclosed to relevant stakeholders and, where there is a broad market impact, the public.

Identification and consideration of stakeholder interests

The user governance framework of Euroclear ensures that the interests of clients and other stakeholders are taken into account in the CSDs' design, rules, overall strategy and major decisions.

Euroclear Bank has established a User Committee in accordance with the applicable legal and regulatory requirements. The User Committee is composed of representatives of Participants and issuers in the securities settlement system.

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[5] *The validation function is a separate department within Risk Management and reports to the Group Chief Risk Officer. The model validation function is an independent function and may not be in charge of model development, implementation or use.*

The User Committee provides independent advice to the Board on key arrangements which impact Euroclear Bank users and acts as a primary source of feedback and interaction between the user community and Euroclear management. The User Committee is independent from any direct influence from the Euroclear Bank Board or Management Committee.

Euroclear Bank also replies to consultations that are relevant for its services and users, whether initiated by regulatory bodies or law makers and participates in industry forums to ensure it remains informed of markets needs and can adapt its services as an FMI accordingly. Additionally, Euroclear Bank launches a client satisfaction survey on a regular basis.

Disclosure

Major decisions are communicated to owners (ESA up to the Euroclear Holding SA/NV shareholders) for information or endorsement as the case may be through the 'Notice to Shareholders' for the annual general meeting and for each extraordinary general meeting.

Communications (including publication of legal contractual agreements, Newsletters, Disclosure Framework, ISAE 3402 etc.) are made to clients and other users via the channels contractually defined. In addition, the sales and relationship managers are at the disposal of clients and prospects for any information needed.

Principle 3: Framework for the comprehensive management of risks

An FMI should have a sound risk-management framework for comprehensively managing legal, credit, liquidity, operational, and other risks.

Key consideration (KC) 1: An FMI should have risk-management policies, procedures, and systems that enable it to identify, measure, monitor, and manage the range of risks that arise in or are borne by the FMI. Risk-management frameworks should be subject to periodic review.

Risks that arise in or are borne by the FMI

Euroclear Bank describes the risk categories used to facilitate risk identification and analysis in the Enterprise Risk Management (ERM) framework. For each risk category, Euroclear Bank defines a risk strategy that outlines its broad approach to managing and mitigating those risks. The key sources of risk (whether direct or indirect) are defined in our Risk Library by level one, two and three categories. Below is the list of level one categories, supplemented by the most material level two risk categories aligned with the annual Internal Control System Report:

- Strategic & Business Risk: the risks arising from strategic decisions and supporting business model, and risks that the company does not achieve its aimed and predicted financial results
- Change & Project Risk: Change Risk is the risk of failure with respect to the change management process including the tools and techniques to manage the people side of change to achieve the required business outcome. Project Risk is defined as an uncertain event or condition that, if it occurs, has a negative effect on a project's objectives (including scope (value to stakeholders), budget and time to market)
- Operational Risk: the risk of loss resulting from inadequate or failed internal processes, people and systems, or from external events. Amongst the most material level two risks categories we identify:
    - Clients, products & business practices: losses arising from an unintentional or negligent failure to meet a professional obligation to specific clients (including fiduciary and suitability requirements) or from the nature or design of a product
    - Execution, delivery & process management: losses from failed transaction processing or process management, from relationships with trade counterparties or suppliers
    - Fraud Risk: losses due to acts of a type intended to defraud, misappropriate property or circumvent regulations, the law or company policy, excluding diversity/ discrimination events, which involve at least one internal / external party

  - ICT & Data Risk is defined as the risk of loss related to the use of, or dependence on, information and communications technology (ICT), electronic data, and digital or electronic communications
  - ICT Security Risk is defined as the risk of a loss due to unauthorised access to ICT systems and data from within or outside the institution (e.g. cyber attacks)
  - Business Disruption Risk is defined as the risk that business disruption arrangements are inadequate to ensure continuity in case of business disruption due to system failure or any other event
  - Suppliers & Outsourcing Risk: risks arising from Euroclear's suppliers and outsourcing providers

- Legal & Compliance Risk is the risk of financial loss or reputational damage arising from failure to comply with legal and regulatory requirements and material contractual obligations necessary to maintain our license to operate or protect the Euroclear Bank's rights and interests
- Conduct & Culture Risk is the risk arising from Euroclear Bank's corporate and risk culture, governance arrangements, conduct and dealings with stakeholders and shareholders, and Euroclear Bank's corporate responsibility as an international financial market infrastructure
- Credit Risk is the risk to Euroclear's earnings or capital arising from Euroclear's obligor's failure to perform due to inability or unwillingness on its financial obligations to Euroclear on time and in full
- Liquidity Risk is the risk arising from being unable to settle a cash or securities obligation when due resulting from inappropriate and/or insufficient liquidity sources.
- Market Risk is the uncertainty on the value of assets and liabilities (on- or off-balance sheet) and on the future earnings (linked to foreign exchange or interest rate movements)
- Systemic Risk is the risk of disruption to financial services organisations that has the potential to have serious consequences for the financial system and/or the real economy. Systemic risk events can originate in, propagate through, or remain outside of Euroclear Bank/group

Enterprise Risk Management Framework

The Euroclear group developed and maintains its ERM Framework in line with market practices and regulatory expectations which provides a robust and consistent approach to risk management across the Euroclear group, including Euroclear Bank, and is based on six key components:

1. business strategy, objectives, risk capacity and risk appetite
2. risk governance
3. risks in execution (covering risk identification, risk assessment, risk response and risk monitoring)
4. data & technology
5. risk culture
6. risk monitoring and reporting

The ERM framework is supported by a suite of *Board policies*, *Management Policy Handbooks* and guidelines which are reviewed periodically. This includes (but not limited to) policies on corporate risk, operational risk, systemic risk, IT risk, model risk and business risk.

Euroclear Bank's mission and objectives, and what the clients, the capital markets and other relevant stakeholders expect is to:

- support an open marketplace where scale and connectivity across the spectrum of market Participants are competitive strengths. Euroclear Bank is a trusted FMI that complies with laws and regulations
- commit to invest in supporting market stability, delivering shared economies of scale and developing markets locally and globally while growing profit in a sustainable and responsible way
- serve the public good by ensuring the efficiency of markets and actively enabling the reduction of risk
- encourage a high performing culture that respects our corporate values through our diverse, global workforce

Euroclear Bank's strategy helps to achieve these objectives. It is reinforced by the regulatory framework in which Euroclear Bank operates, which aims at minimising the risks associated with providing FMI services. The risk appetite reflects what the users and the market would expect from an FMI in line with Euroclear Bank's systemic risk role and strives to ensure financial system stability. The Board ensures that the strategy set is appropriate and adequately implemented.

Euroclear Bank's risk appetite is set by the Board below the risk capacity and represents the maximum amount of risk the Board is willing to accept to achieve its objectives, including preservation of the long-term strength of the company and trust of all key stakeholders.

Euroclear Bank articulates and monitors its risk appetite by way of metrics providing Senior Management and the Board with an indication of risk profile versus appetite. It is reviewed and adjusted on an ongoing basis in function of the strategy while also playing a key role in defining the strategy itself.

Euroclear Bank defines its risk capacity as the loss absorption capacity and maximum capacity of available liquid resources without breaching regulatory requirements. The ERM Framework integrates risk appetite with the overall management of strategy, capital and recovery planning, along the continuum of risk. It also includes appropriate early warning signals to manage the risks and avoid the need to activate our recovery plans.

Risk governance

Euroclear Bank operates a Three Lines Model. Each line plays a distinct role providing Senior Management and the Board with confidence that Euroclear Bank and the Euroclear group are likely to achieve their key goals through the effective governance and management of risks.

The First Line comprises all businesses, departments, divisions, and functions across the Euroclear Bank (the Business), each of which manages risks arising from their respective activities and processes, in line with the risk appetite. The Business may be supported by Euroclear Bank Risk Management function as well as by first line Risk Champions, Compliance Champions, Business Resilience Champions and control units.

The First Line must ensure that they have adequate and effective controls to manage their risks and that these controls are adequately monitored.

Whilst part of First Line, certain divisions (e.g. Legal, Business Resilience, IT and HR) have a crucial role in supporting the management of specialist risks such as Legal Risk, Business Disruption Risk, Information and Communications Technology (ICT) Risk, Employment Practice Risk. Due to their expert knowledge, they have a role which includes being responsible for issuing *Policy Documents* (including *Group Policies*) in their area of expertise, monitoring and reporting on transversal risks as appropriate.

The Second Line is performed by:

- Risk Management as responsible for providing independent oversight, challenge and opinion on the management of risk-taking activities and for advising the Board on the implications of the corporate strategy on the risk profile. The operating model of the Risk Management function is further detailed in the Risk Management Charter

- Compliance & Ethics (C&E) is responsible for providing independent oversight of (as detailed in the C&E Charter and *Compliance Risk Group Policy*):
    - Compliance Risks (including designing, implementing and overseeing the Compliance Risk Management framework, providing assurance on the identification, assessment and management of Compliance Risks)
    - Fraud Risks with exclusion of Fraud Risks that are primarily caused by a direct breach of cyber and IT controls (e.g., identity and access management) which are overseen by Risk Management. Risk Management is responsible for ensuring that there is a holistic view of Fraud Risks in its reporting
    - Conduct & Culture Risks as per the Code of Business Conduct

The Third Line is performed by Internal Audit. To add value and support Euroclear Bank in achieving its objectives, Internal Audit provides the Board with independent reasonable assurance and insight on governance, risk management and internal controls. The operating model of Internal Audit is further detailed in the Internal Audit Charter.

Both Second and Third line are supported by ESA as service provider, which is further clarified in their respective charters.

The Board oversees the effectiveness and independence of the control functions.

Risk management systems

A Positive Assurance Reporting (PAR) process is in place to ensure that the key risks and associated key controls are identified by the business in all divisions, and effectively monitored to allow timely management of risks and adjustment of the control system when necessary. The PAR enables Euroclear Bank management to evaluate whether key risks are appropriately mitigated through the effective operation of key controls.

The PAR process feeds into the Internal Control System (ICS) report, providing the Board a view on the effectiveness of the ICS.

The ICS report includes the view of all the three lines and allows the Board to take a holistic view on Euroclear Bank's risk and control environment.

Euroclear Bank promotes and encourages the pro-active identification and logging of risk issues. Each issue is populated with action plans that set out the specific steps to take in order to mitigate or reduce the risks to an acceptable level as per Euroclear Bank's risk appetite

Issues are logged and tracked in the Itrack database. Incidents are logged and tracked in a new Integrated Risk Management (IRM) tool: the process of migrating issues and risks to the IRM tool will continue throughout 2023. The tools allow for effective assessment and follow-up of risks, control gaps and weaknesses that have been identified by the First, Second or Third Lines. All risk management tools are subject to periodical internal audits.

Review of the risk management policies, procedures and systems

The policy owners, in consultation with the relevant stakeholders and the Risk Management function, review policies at regular intervals, or as needed (e.g. material changes in regulation, market practices). Revised policies are reviewed by the relevant governance bodies in line with our Policy Framework.

Risk aggregation

Euroclear Bank monitors all risks that arise in or are borne by Euroclear Bank, as described above under KC 1 - financial and non- financial. The PAR process ensures that material inherent risks and the key controls to mitigate them are monitored and assessed regularly. Residual risks are aggregated by risk category, as per the Euroclear's Risk Library, and feed the annual process of the ICS report.

Additionally, for financial risk (liquidity, credit and market risks), the First Line monitors the exposures on its Participants and counterparts for all the roles they may have towards Euroclear Bank, such as Participant (credit facility for settlement activity, securities borrowing), treasury counterpart (for re-deposits of cash balances), issuer of securities (used as collateral by other Participants, or securities that are being redeemed/pay interest) and lead manager in the new issues process.

The maximum credit limit ('Global Family Limit') caps the exposures from the treasury and Participant roles. Next to this, Euroclear Bank manages the cash correspondent intra-day credit risk through intra-day cash realignment between cash correspondents or to Euroclear Bank's central bank accounts, when applicable.

The Risk Management division produces a quarterly Corporate Risk Report to the Management Committee and Board Risk Committee. This report outlines Euroclear Bank's risk profile vis-à-vis the risk appetite set by the Board and the Chief Risk Officer's key risk concerns (current and emerging).

Effectiveness of the risk management policies, procedures and systems

The Board Risk Committee

The Euroclear Bank Board Risk Committee oversees the Euroclear Bank's Risk Management function and reviews its remit, monitors and periodically assesses its effectiveness and independence and that it has adequate resources and appropriate access to information[6].

Risk Management

The Risk Management division's and Euroclear Bank's Risk Management function's mission, as described in the Risk Management Charter, is to:

- deliver, maintain and support the embedding of the ERM framework
- help foster a healthy risk culture throughout the Euroclear group
- provide the Board and senior management with high quality, independent risk challenge, advice and guidance
- exercise leadership on risk management matters in the financial market infrastructure sector

On an annual basis the Euroclear group and Euroclear Bank Risk Management functions conduct a formal self-evaluation of the effectiveness of the Risk Management function, as well as assess the effectiveness of the ERM framework. The outcome of the self-assessment is reported and discussed at the Risk Committee. The assessment identifies actions where the required level of maturity, discipline or effectiveness was not reached and includes progress updates on such actions from previous effectiveness reviews.

Internal Audit

Internal Audit provides independent assurance over Euroclear's risk management and internal control processes, including periodically assessing the effectiveness of the Risk Management division. In performing its work, Internal Audit assesses whether the ERM framework is adequately designed and operating effectively and assesses whether risks are appropriately identified and fairly stated. If necessary, Internal Audit has access to specialist external (co-sourced) resources to assist in their work. Internal Audit provides summaries of key findings to the Audit Committee and also shares relevant information with the Board Risk Committee.

[6] *The oversight of the adequacy and effectiveness of the risk management systems is the responsibility of the Audit Committee and shall be undertaken based on reporting from Internal Audit and reported to the Risk Committee and Board.*

Other assessing mechanisms: First Line

The First Line is not responsible for monitoring the effectiveness of the risk management framework. However, First Line management is encouraged to document and provide feedback observations or concerns on the design or effectiveness of the ERM framework through their local Risk Champion to Risk Management.

A network of First Line Risk Champions appointed by all Euroclear Bank services serves as a platform to embed the ERM Framework within Euroclear Bank and as a feedback mechanism to Risk Management on the effectiveness of the Framework.

Key consideration (KC) 2: An FMI should provide incentives to clients and, where relevant, their customers to manage and contain the risks they pose to the FMI.

Euroclear Bank continuously encourages Participants to manage and contain the risks they pose to Euroclear Bank via a number of mechanisms such as:

- establishing a robust client admission process and regular review
- keeping Participants informed through user documentation, extensive operational reporting and training, relationship (via User Committee or client facing relationship)
- putting in place measures to manage risks posed by the underlying clients of our clients (see Principle 19)
- applying other types of measures (e.g. charges to deter riskier behaviour, regular reassessment of clients' risk profile)

Client admission process

Euroclear Bank has implemented a dedicated process consisting of an initial Know-Your-Client (KYC) exercise to ensure that each Participant meets the admission criteria at the time of its admission and on an ongoing basis, via regular reviews. We elaborate on Euroclear Bank's sponsorship process in Principle 18.

Documentation and Information

Euroclear Bank encourages its Participants to use the system in the best way, by providing extensive information on their use and on the products and services available. This helps them to better manage their risks when dealing with Euroclear Bank and therefore minimise the risk they pose to Euroclear Bank. Information such as Terms and Conditions, Operating Procedures, Newsletters, Product/Service Descriptions are provided both via the Euroclear website and via dedicated trainings. The Euroclear Commercial Division keeps Euroclear Bank's Participants informed of changes and evolution.

Due diligence information is provided to (potential) Participants, giving information on how to work with Euroclear Bank, therefore providing additional elements for them to assess the risk they incur when doing business with Euroclear Bank.

Euroclear's Pillar 3 disclosure provides on a quarterly basis insight on the Euroclear group's key risks and how they are managed. The annual disclosure includes information on risk management objectives and policies, and governance arrangements. These reports are published on the Euroclear website.

Finally, Euroclear Bank has a User Committee that meets at least three times a year to exchange information with Participants.

Other committees organised by Euroclear (i.e. FundSettle user group, Collateral Management) give the opportunity to exchange information with the Participants in a specific business line.

In addition to above listed documentation and information sharing, Euroclear Bank also provides operational reporting designed to enable Participants to monitor, manage and reduce the risk they face when using Euroclear Bank's services. To this end, extensive information is provided to Participants including:

- data on the Participant's transactions
- the Participant's cash and securities positions
- the amount of credit facilities provided by Euroclear Bank, which are uncommitted, intra-day, secured and documented
- the credit usage (only if the Participant has a credit line)
- additional real time information allowing Participants to anticipate their collateral and credit needs for the day and for the next overnight processing cycle

Furthermore, Euroclear Bank requires all Participants to reconcile their positions daily.

Other measures

Credit that may be granted to Participants by Euroclear Bank is intra-day and with the sole purpose to facilitate the settlement of transactions (for more details, please refer to Principle 4). Euroclear Bank deploys large sets of measures to disincentivise client's own risk taking and the risks they may pose on Euroclear Bank, as defined in the Financial Risk Board Policy and Financial Risk Policy Handbook:

- all Participants' activity is fully collateralised and strict criteria on the quality of collateral are applied with adequate haircuts (see Principle 5 for more details)
- reimbursement procedures and sanctioning rates act as an effective deterrent to discourage Participant intraday credit exposures to translate into overnight credit exposures

Key consideration (KC) 3: An FMI should regularly review the material risks it bears from and poses to other entities (such as other FMIs, settlement banks, liquidity providers, and service providers) as a result of interdependencies and develop appropriate risk-management tools to address these risks.

Euroclear Bank has a robust risk management framework that supports Euroclear Bank in identifying and managing both the risks posed to Euroclear Bank by the wider financial system (e.g. other actors in the financial system, such as market Participants, FMIs, liquidity providers, other service providers) and the risks Euroclear Bank might cause to other players of the financial system.

Systemic risk considerations are therefore part of the day-to-day risk management activities (i.e. identification, assessment, response, monitoring, and reporting) across the three lines.

Inbound systemic risks typically arise from operational, credit, liquidity and market events. Therefore, the First line remains the primary responsible for the integration of systemic risk considerations into their day-to-day risk management activities.

Outbound systemic risk can arise from the same risk sources or from Euroclear Bank's operating model. The First Line should thus systematically consider in their processes both the risks Euroclear Bank faces and the risks Euroclear Bank poses to the financial system. For details on credit, liquidity, market and operational risk management in Euroclear Bank, refer respectively to Principle 4, 7 and 17.

Euroclear Bank has also established additional processes and tools to further grow its systemic risk management capabilities (e.g. through interdependency assessments).

Risk management tools

Beside existing tools and processes used for all risk types[7], specific methods and tools are used, such as the horizon scanning process and regular contacts with other actors on the market, to further enhance the systemic risk framework and to challenge the First line's views on the potential systemic impacts their activities/processes might generate.

Horizon scanning refers to a series of activities that Risk Management as Second Line facilitates, aiming at the identification of potential emerging risks impacting Euroclear Bank or the financial system.

Interconnectedness is considered in our stress scenarios feeding into Euroclear Bank's Internal Capital and Liquidity Adequacy Assessment (ICLAAP) and also when assessing the risks this presents to the need to activate Euroclear Bank's Recovery, Restructuring and Orderly Wind Down Plan (RRW).

[7] *See KC 1, Principle 3*

Key consideration (KC) 4: An FMI should identify scenarios that may potentially prevent it from being able to provide its critical operations and services as a going concern and assess the effectiveness of a full range of options for recovery or orderly wind-down. An FMI should prepare appropriate plans for its recovery or orderly wind-down based on the results of that assessment. Where applicable, an FMI should also provide relevant authorities with the information needed for purposes of resolution planning.

As an FMI, Euroclear Bank provides critical functions to the financial markets. To identify criticality, Euroclear Bank considers the extent to which a disruption could have adverse real economy or financial stability implications, following the criteria indicated by the Single Resolution Board and the EU Regulation[8].

The Recovery, Restructuring and Orderly Wind Down plan

In accordance with regulatory rules and guidelines, Euroclear Bank prepares a yearly RRW plan. This RRW plan is supported by a testing framework which includes the testing of the options.

Building on a broader risk framework, Euroclear Bank's RRW plan aims to assist the Board and Management in taking timely and appropriate actions should Euroclear Bank face a situation that threatens its financial viability as a going concern and its continued provision of critical functions to the market.

In particular, the RRW plan presents the Euroclear Bank Board's conclusions on:

- sources of residual risk and recovery scenarios:
    - the sources of risks or identified vulnerabilities which, in an extreme but plausible context, could threaten Euroclear Bank's financial viability and hence its ability to continue providing its critical functions
    - how, using scenario analysis as a tool, residual risk might crystallise and undermine Euroclear Bank's financial position, necessitating activation of the plan

- capabilities and options:
    - calculation of the recovery capacity through the analysis of extreme measures (options) which may be viable – depending on the situation at hand – to financially recover and/or as required restructure Euroclear Bank
    - potential use of the options to deal with the crystallised impact of a series of simulated stress scenarios to demonstrate that Euroclear Bank has sufficient financial capacity to do so effectively
    - preparatory measures to enhance the effectiveness of the identified options

[8] *Single Resolution Board's Guidance on the Critical Functions Report based on EU Regulation 2016/778 on criteria for the determination of the activities, services and operations with regard to critical functions, and for the determination of the business lines and associated services with regard to core business lines*

- governance and implementation:
  - the appropriate decision-making in the 'runway period' prior to, during and after the activation of the RRW plan
  - accompanying the RRW plan is a RRW Dashboard which contains a series of financial and operational indicators which are calibrated to ensure timely escalation to decision makers to determine the need to activate the RRW plan

The preparation of the RRW plan is coordinated by the Risk Management function, based on input from other divisions. The plan owner is the CEO, whose responsibility is to liaise with the different stakeholders to ensure the plan is valid, complete, properly reviewed, maintained and updated.

The RRW plan is reviewed annually or when a significant change occurs that would impact the feasibility or materiality of a recovery option. As required by relevant regulations, the plan is shared with other relevant authorities.

Recovery scenarios

Euroclear Bank's RRW plan models the impact of various extreme but plausible hypothetical scenarios that span the range of risks to which Euroclear Bank is exposed. The scenarios modelled are selected based on their applicability impact (idiosyncratic vs. systemic), speed of crystallisation (slow burning vs. fast moving) and risks type (credit, liquidity, business, etc.).

Each scenario is calibrated to ensure that it is sufficiently severe to threaten the viability of Euroclear Bank as a going concern if extreme measures are not taken. For each scenario modelled, reverse stress testing is also performed to assist in identifying the potential financial point of non-viability (where the capital resources and available recovery capacity has been exhausted), and thus activation of the accompanying Wind-Down plan will need to be considered. Various combinations of these hypothetical extreme scenarios are also considered.

The scenario analysis presented in the RRW plan builds on similar analysis carried out routinely by Euroclear Bank to size and assess the sufficiency of its capital and liquidity resources, and thus a number of the scenarios modelled in the RRW plan are more extreme versions of those utilised in the preparation of the ICLAAP.

Scenario analysis also ensures that potential structural weaknesses to recoverability are identified and resolved, to the extent possible, ahead of a potential recovery situation.

Recovery options

The Euroclear Bank RRW plan describes in detail a range of measures which could be taken in an appropriate timeframe to restore the financial soundness of Euroclear Bank should a significant financial loss occur. The options strategy selected will be matched to the extremity of the stress Euroclear Bank is under.

The measures considered are categorised as:

- pre-Recovery tools - the use of measures (if not already taken) in the Euroclear Bank Contingency Funding Plan (CFP) and insurance policies which can be utilised
- recovery options - recapitalisation measures to restore depleted capital and/or liquidity to the required level, or to generate additional capacity should losses arise beyond the level contemplated in capital-sizing decisions
- restructuring options - measures which can be used to preserve resources, avoid further losses, or address any structural weaknesses identified as either necessitating the need to activate the RRW plan, or during the 'recovery period'.
- wind down options - to be implemented once Euroclear Bank is determined to have reached, or is likely to reach, the point of non-viability. The options aim to ensure that Euroclear Bank can exit its critical functions in an orderly manner

By supporting Euroclear Bank's recovery or restructuring, or by facilitating an orderly sale or transfer of assets, it is Euroclear Bank's assessment that the effective implementation of identified options and strategies would support financial stability in the markets it serves, by ensuring the uninterrupted provision of critical functions.

Resolution plan

Euroclear Bank supports the National Resolution Authority in the preparation of the resolution plan for the Euroclear group by annually (and ad hoc as requested) submitting data via a series of dedicated templates. Euroclear is implementing a series of requirements to comply with resolution requirements as part of a multi-year programme.

Senior representatives of Euroclear Bank are also represented on the Resolution Programme Steering Committee which has been established to ensure the Euroclear group's resolution readiness in-line with the expectations of the National Resolution Authority.

Principle 4: Credit Risk

An FMI should effectively measure, monitor, and manage its credit exposure to clients and those arising from its payment, clearing, and settlement processes. An FMI should maintain sufficient financial resources to cover its credit exposure to each client fully with a high degree of confidence. In addition, a CCP that is involved in activities with a more-complex risk profile or that is systemically important in multiple jurisdictions should maintain additional financial resources sufficient to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the two largest clients and their affiliates that would potentially cause the largest aggregate credit exposures to the CCP in extreme but plausible market conditions. All other CCPs should maintain, at a minimum, total financial resources sufficient to cover the default of the one client and its affiliates that would potentially cause the largest aggregate credit exposures to the CCP in extreme but plausible market conditions.

Key consideration (KC) 1: An FMI should establish a robust framework to manage its credit exposures to its clients and the credit risks arising from its payment, clearing and settlement processes. Credit exposure may arise from current exposures, potential future exposures, or both.

The Policy Framework

Euroclear Bank has established a robust policy framework which enables it to identify, monitor and manage credit risks it is exposed to.

Policy Framework Hierarchy

The *Corporate Risk Management Board Policy* sets the minimum requirements on Euroclear's approach to risk management. These are further elaborated in the *ERM Policy Handbook* which provides a generic framework for the identification, assessment, response, monitoring and reporting of all risks relevant to Euroclear Bank. The underlying Financial *Risk Board Policy* and *Policy Handbook* set out the guiding principles for managing financial risks including financial resources, capital, credit, liquidity, funding and market risks, as well as limits and collateralisation rules. This overarching policy is further complemented by Implementing Procedures which translate the guiding principles into detailed processes and procedures.

The Credit Risk Framework

As a Central Securities Depository operating an SSS with a limited purpose banking license, Euroclear Bank provides uncommitted multi-currency credit facilities to its Participants to support their activity in the Euroclear System. As such credit risk is mainly taken on borrowing Participants. However, credit risk is also taken on cash correspondents and other counterparts when performing the day-to-day balance sheet management, when re-depositing or investing Participant's long cash balances, the proceeds of own debt issuances or capital.

The credit risk framework, described in the FRPH, sets limits and thresholds based on Euroclear Bank's credit risk appetite, and addresses among others the size and conditions of facilities for (borrowing) Participants and facilities to support treasury activity, concentrations and collateral quality.

Main principles:

- Credit facilities are intraday, uncommitted and may be multi-currency and extended principally to support settlement efficiency.
- Credit facilities are communicated in USD.
- No credit or collateral value is granted for currencies in which Euroclear Bank has no liquidity capacity.
- Granting of a facility is a discretionary decision based on an appropriate assessment of the creditworthiness and risk profile of respectively the (borrowing) Participant or another counterpart.
- The active monitoring of currency fluctuations may require an adjustment to the size of the credit facilities from time to time.
- The size and conditions of the facility reflects the financial soundness of the (borrowing) Participant or other counterpart, must be in line with its Euroclear Bank activity and internal and regulatory limits.
- Although credit facilities are denominated in USD, there is a system-embedded limit (at Participant family level) per currency, determined by the Qualified Liquidity Resource (QLR) of Euroclear Bank per currency.
- Credit facilities are fully secured with collateral[9] for which strict collateralisation rules apply (see Principle 5). Collateral is held and pledged in Euroclear Bank and a collateral agreement must be in place to allow monetisation and liquidation of the collateral in the event of a borrowing Participant default.

[9] *Unsecured credit facilities are only provided when allowed under CSDR i.e. to exempt entities in accordance with Article 23(2) of Regulation (EU) 390/2017, and central banks, multilateral development banks and international organisations (other than exempt entities) of which the exposures are covered by Euroclear Bank's eligible capital after deduction of the regulatory CSDR capital requirement.*

Governance

Framework documents are approved by the Euroclear Bank Board or the Euroclear Bank Management Committee and are reviewed at least annually or in case of material changes. Additionally operational processes are designed and reassessed on a regular basis to actively monitor and minimize credit risks.

Key consideration (KC) 2: An FMI should identify sources of credit risk, routinely measure and monitor credit exposures, and use appropriate risk management tools to control these risks.

Sources of credit risk

Credit risk is defined as the risk to Euroclear Bank's earnings or capital arising from Euroclear Bank's obligor's failure to perform due to inability or unwillingness on its financial obligations to Euroclear Bank on time and in full. Euroclear Bank has identified the following sources of credit risk:

1. Credit risk arising from Participants:
   - Settlement activities*:* settlement credit exposure (due to primary and secondary market activity) occurs when Euroclear Bank debits a Participants' cash account to execute a transaction for an amount above the cash available in that currency, provided that such Participant has been granted a credit facility and has sufficient collateral.
   - Securities lending and borrowing (SLB): to support settlement activity, the Securities Lending and Borrowing programme automatically generates a borrowing for the account of the Participants who adhered to the program, provided that sufficient securities are available in the lending pool (i.e. securities held by lenders that are available for lending on an automatic basis) and that the applicable risk management measures are met on the securities borrower side (respect of the credit limit and full collateralisation of the position).
   - GC Access*:* General Collateral (GC) Access is a service which allows Participants to borrow high-quality sovereign and supranational securities on demand (primarily for collateral management purposes). All GC Access loans are fully collateralised and borrowers have an amount reserved for this activity within their global family limit.
   - Cash services*:* Euroclear Bank provides cash services to its Participants allowing them to transfer funds in/out. Euroclear Bank may also allow Participants to use their credit facility (based on currency limits) to wire out expected proceeds linked to Euroclear Bank services (due to different time zones and currency deadlines).

     FundSettle Non-cleared[10] *Nominee*[11] *activity*: Euroclear Bank provides a service which allows Participants to place subscription orders held through a Nominee account in the books of the issuer or the CSD (see Principle 16, KC1).

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[10] Non-cleared funds do not require an up-front cash payment to place a valid subscription order in the fund. The settlement of the subscription usually takes place a few days later, as indicated in the fund prospectus.

[11] Euroclear Bank holds the fund's shares or units in the books of the issuer (register generally held by a transfer agent) or the CSD (for funds distributed via a CSD) in the name of Euroclear Bank SA/NV or under FundSettle EOC Nominees Ltd, a wholly owned subsidiary of Euroclear Bank.

Non-cleared FundSettle Nominee activity is self-collateralising due to the rights that Euroclear Bank holds over the subscribed Funds until payment by the Participant has been reconciled and any residual risks (potential price difference between redemption and purchase price plus incurred costs) are covered by assets the Participant holds in the Euroclear System.

- For SLB and GC Access, the (risk arises from the guarantee that Euroclear Bank provides to the lender on the sufficiency of the collateral should the borrower fail to return the lent securities. For FundSettle, the risk arises from account opening/application forms signed by Euroclear Bank or local laws and regulations requiring Euroclear Bank to assume the settlement obligation.

2. Credit risk from cash correspondents & Settlement banks[12]: Credit exposure can arise from any long cash positions that Euroclear Bank has throughout the day (intraday credit risk) due to income, redemption, and money transfer activity, and/or on any residual long cash position left overnight. Within Euroclear Bank, the role of Treasury is to manage its cash flows such that the end of day positions at the cash correspondent are within risk appetite and regulatory requirements. Additionally, Euroclear Bank further uses its central bank accounts to mitigate risks on its cash correspondents and settlement banks.

3. Credit risk from Treasury counterparties: Euroclear Bank has treasury exposures resulting from Participants' end-of-day cash positions. These long cash positions are placed in the market with high-quality counterparties for a short duration, preferably by using reverse repurchase agreements (reverse repos) or invested in very high-quality securities with relatively short-term maturities. Unsecured treasury credit exposure is allowed but kept limited. More information is included in Principle 16, KC 4.

4. Bridge with CBL: Euroclear Bank is exposed to credit risk in the context of settlement taking place over the interoperable link (i.e. the Bridge) with CBL. The credit exposure resulting from the Bridge with CBL is secured by means of a Letter of Credit issued by a consortium of creditworthy financial institutions in Euroclear Bank's favour. Euroclear Bank is therefore also exposed to the syndicate of banks that have issued the letter of credit, however, only in the event of a CBL default (for further details please refer Principle 20 'FMI links') and no credit institution is allowed to commit to a share of the total outstanding letter of credit above 10%.

5. Issuers: Euroclear Bank purchases securities for its investment, treasury and liquidity books, although the securities are highly rated, Euroclear Bank is exposed to the credit risk of these issuers. More information is included in Principle 16, KC 4.

[12] Settlement Bank is considered to be an entity appointed by Euroclear Bank or Euroclear Bank itself, that supports simultaneous Delivery versus Payment (DVP) settlement and/or asset servicing activities.

As part of the ongoing management of risks, new sources of credit risk may be identified through the following processes:

- risk & control self-assessments
- project risk assessments
- new product & services risk assessments
- new client admission process
- new link risk assessments
- scenario analysis and stress testing

Any newly identified source of credit risk follows a governance process described in the *Corporate Risk Management Board Policy* and relevant policy handbooks.

Measuring and monitoring credit exposures

Facilities are only granted once an assessment of the creditworthiness has been carried out and an internal rating has been assigned by the Credit department. The size and conditions of facilities are determined based on risk appetite and the desired risk profile in accordance with the risk management framework.

The Credit department performs ongoing market monitoring to capture and mitigate any deteriorating credits. It also performs regular reviews (at least annually and more frequently for lower rated Participants) on the size of the facilities to ensure that they remain consistent with the creditworthiness and activity of the Participant or counterpart. Any request for a new or increased facility is subject to a credit review and is only granted in accordance with the defined approval process and respective credit authority levels.

Credit exposure arises when the Participant or counterpart uses its facility. Credit exposure is measured either on a gross (before mitigation and protective measures) or on a net (or residual) basis (after consideration of all mitigation and protective measures). Specifically for securities borrowing (SLB programme and GC Access) an add-on is applied to the gross credit exposure to reflect the potential appreciate in the value of the lent security. Such exposures (gross or net) are then monitored against regulatory limits, internal limits and/or thresholds. Any exposures that are incurred outside of these limits follow a strict governance process, dependent on their nature.

The credit principles are system-embedded: for example, if when settling a Participant's transaction, credit is required above the Participant's credit facility or the quality and amount of collateral held by the Participant is not sufficient to cover the transaction, the instructions are blocked by the system. Any extension of credit beyond the recorded limit (which would be considered only under exceptional circumstances) requires specific approval as outlined by the Euroclear Bank Policy. Similar system-embedded limits exist to limit the credit Euroclear Bank extends to any client in a particular currency, such limits are aligned to Euroclear Bank's ability to generate liquidity in that currency should the client default. Additionally, to ensure Participant wire transfers are related to Euroclear Bank activity, Euroclear Bank controls Participant wire transfers.

On a daily basis, Euroclear Bank monitors intraday peak exposures ex-ante, in real time, and ex-post to borrowing Participants:

(i) at legal entity, family[13] and at Euroclear Bank aggregated level
(ii) at individual currency level

For other counterparties, based on anticipated balances, exposures are diversified with different counterparties within pre-approved limits set by the Credit department in line with Euroclear Bank's risk appetite. Cash correspondent balances are monitored real time, to ensure the balances remain within risk appetite and regulatory requirements. The end of day cash correspondent positions are then controlled ex-post.

Credit risk related to counterparties and financial issuers in the treasury, investment and liquidity books is monitored daily against predefined limits (see Principle 16 - KC 4 for more details).
Finally, system-embedded limits are in place to manage the exposure on CBL (for more information, please refer to Principle 20 'FMI links').

Non-compliance with predefined limits or thresholds are escalated to the relevant governance bodies as defined by Euroclear Bank Policy.

Risk management tools to control credit risk

Euroclear Bank employs the following set of tools to control and mitigate credit risk in addition to its regulatory capital requirements (Article 395 of Regulation (EU) 575/2013, also referred to as CRR - Capital Requirements Regulation):

Concentration limits – Credit extended by Euroclear Bank to its Participants is subject to system-embedded family and individual credit limits. A Global Family Limit (GFL) is put in place to cap the maximum unexpected loss Euroclear Bank may experience on any single family. Additionally, to preserve Euroclear Bank's capital and liquidity, minimum rating criteria and concentration limits are defined for counterparties and financial issuers in the treasury, investment and liquidity books (see Principle 16 - KC 4 for more details).

Mitigation – Different recourses are used to cover any credit exposure that Euroclear Bank may incur due to default following a credit event e.g. a bankruptcy of a Participant.

As standard recourse type, Euroclear Bank uses *collateralisation i.e.* facilities are secured with pledged collateral held in the Euroclear System. The availability is dependent on the minimum between the level of the facility and the amount and quality of pledged collateral. In accordance with Articles 10-11 of Regulation (EU) 390/2017, strict collateralisation rules apply concerning the quality and quantity of securities used as collateral. Euroclear Bank uses a four-category collateral classification system.

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[13] A 'family' is a group of connected entities, identified internally by a common Global Family Number (GFN), the top of the account hierarchy. Group of connected entities is defined in Article 4(1)(39) of Regulation (EU) 575/2013

The internal rating as well as a series of credit, market and liquidity indicators are used to determine the category allocation. Any collateral that cannot be categorised in one of the four categories, is not accepted as collateral. Collateral is valued conservatively in accordance with Euroclear Bank's collateral valuation model (See Principle 5).

In the event of a Participant default, Euroclear Bank has the right to immediately appropriate the Participants pledged securities (appropriation is included in the standard collateral agreement) to offset any credit exposure.

In addition, the following additional recourse types are available to cover potential Participant exposures even if no facility was granted:

- Set-off – Euroclear Bank benefits from a unity of account provision and a contractual right of set-off, which allows it to set-off the overall credit balance of Participants' single and indivisible current accounts at any time against its debts that have not been paid when due. This means in case of default, Euroclear Bank has the possibility to set off Participants' exposures in one currency with long cash balances in another currency

- General pledge – to the extent permitted by applicable law, Euroclear Bank has the right to consider as collateral all securities and cash deposited in the Euroclear System (by a Participant, whether or not on behalf of its underlying clients), unless agreed otherwise in writing with a Participant. Euroclear Bank can enforce the collateral to secure any claim that Euroclear Bank might have against the Participant in relation with its use of the Euroclear System (the general pledge is documented contractually in the *Operating Procedures of the Euroclear System*)

- Statutory lien – Euroclear Bank can rely on the Belgian statutory lien on Participants' proprietary assets held in the Euroclear System; it only secures any claim against them arising from the settlement of transactions through or in connection with the Euroclear System

Euroclear Bank has discretionarily waived the general pledge and statutory lien over the balances of all securities that have been separately and expressly identified in writing by the Participant as an account to which solely customer securities are credited, except where it secures claims arising in connection with the clearance or the settlement of transactions through, or in connection with, the System, carried out on behalf of Participants' customers (including but not limited to claims resulting from fees, charges, loans, reversals or advances).

Euroclear Bank has a right-to- debit Participants that have transactions that have settled over the bridge on a pro-rata basis. The right to debit could lead to both a temporary and permanent debit in Participants' accounts. For more information related to the credit mitigation recourse linked to the exposure vis-à-vis CBL, please refer to Principle 20 'FMI links'.

Credit reduction initiatives – Euroclear Bank has developed mitigation actions and tools aiming at reducing counterparty and credit risks both for Participants and Euroclear Bank e.g. Euroclear Bank is running a DVP Model 1 settlement system providing immediate finality of transactions in most cases. The development of mitigation actions and tools aiming at reducing counterparty and credit risks remains an ongoing exercise, either by collaborating with Participants to reduce credit usage or by making changes to its systems.

Sanctioning rates – Euroclear Bank applies deterrent interest rates to discourage Participant overnight credit exposures resulting from short (overdrafts) or long cash positions[14].

- Overdraft rates are composed of three elements:
  (i) a central bank rate
  (ii) a currency factor to capture market volatility and liquidity risk
  (iii) a credit factor to capture the creditworthiness of the overdrawn Participant.

  Euroclear Bank has a framework in place which ensures that its overdraft rates (central bank rate and currency factor combined) are more punitive than (1) borrowing rate at the central bank, (2) overnight market rates and (3) own funding cost.

- In principle, standard credit interest rates are set at 0% but Euroclear Bank can apply negative standard credit interest rates taking into consideration:
  (i) the reinvestment rates
  (ii) the cost of capital
  (iii) a market liquidity buffer

The effectiveness of these credit risk management tools is assessed through the on-going monitoring and reporting against Euroclear Bank's risk appetite and limits/thresholds. Any breaches or excesses will be escalated to the appropriate decision-making body in line with the applicable policy.

Key consideration (KC) 3: A payment system or SSS should cover its current and, where they exist, potential future exposures to each client fully with a high degree of confidence using collateral and other equivalent financial resources (see Principle 5 on collateral). In the case of a DNS payment system or DNS SSS in which there is no settlement guarantee but where its clients face credit exposures arising from its payment, clearing, and settlement processes, such an FMI should maintain, at a minimum, sufficient resources to cover the exposures of the two clients and their affiliates that would create the largest aggregate credit exposure in the system.

As a rule, all Participant credit facilities are fully secured with collateral held and pledged in Euroclear Bank. Collateral is valued in accordance with Euroclear Bank's conservative collateral valuation model at least on a daily basis with possible real-time adjustments when required. Any reduction in the collateral value of the Participants' pledged portfolio automatically results in a reduction of its credit usage capacity.

Potential future exposure can arise if the collateral value is not sufficient to cover the credit exposure. To reduce the likelihood of any potential residual credit exposure, Euroclear Bank:

- manages down exposures as creditworthiness decreases
- applies collateral haircuts to all securities according to a conservative collateral valuation model
- applies a currency margin to all cash and securities used as collateral
- applies an add-on to the value of any securities that are borrowed
- monitors the collateral concentration in Participant accounts

[14] *Please refer to myeuroclear.com for the most recent debit and credit interest rates.*

To test the adequacy of the haircuts and currency margins, Euroclear Bank performs regular back-testing and yearly collateral stress tests. The stress tests aim at assessing whether Euroclear Bank can withstand severe impairments of collateral values.

One of the scenarios consists in better assessing the risks in case the collateral liquidation period takes longer than envisaged in the standard collateral valuation model (i.e. 10 days). For further details, see Principle 5 on Collateral, Principle 15 on General Business Risk and Principle 7 on Liquidity Risk for the composition of financial resources to cover current and potential future exposures.

Key consideration (KC) 4, 5 and 6 are not applicable to Euroclear Bank.

Key consideration (KC) 7: An FMI should establish explicit rules and procedures that address fully any credit losses it may face as a result of any individual or combined default among its clients with respect to any of their obligations to the FMI. These rules and procedures should address how potentially uncovered credit losses would be allocated, including the repayment of any funds an FMI may borrow from liquidity providers. These rules and procedures should also indicate the FMI's process to replenish any financial resources that the FMI may employ during a stress event, so that the FMI can continue to operate in a safe and sound manner.

KC 1 describes the policy framework hierarchy. The rules and procedures that address credit losses are described in the *Financial Risk Policy Handbook* and its underlying implementing procedures. In addition, Euroclear Bank assesses its capital adequacy under stress scenarios during the annual ICLAAP and replenishment of financial resources during a stress event is described in the RRW.

Allocation of credit losses

As mentioned under KC 3, as a rule, all Participants' credit is fully secured, Participants generally post high quality collateral in excess of their credit usage, which is continuously monitored with haircuts regularly reviewed as necessary. Euroclear Bank Participants are also subject to close monitoring by Euroclear Bank's credit officers and the Participant credit exposures are managed within a strong credit risk framework. Accordingly, in all but the most extreme circumstances, losses would be addressed on a defaulter-pays basis via the appropriation/liquidation of Participant securities collateral and other available cash balances. As set out in more detail under Principle 20 'FMI links', where a loss relates to credit exposures across the Bridge, bespoke loss allocation tools are available.

Despite being considered beyond extreme but plausible, Management acknowledges that there remains the potential of a remote risk in case of a sudden failure of a cash correspondent (e.g. default) without early warning signs with which Euroclear Bank could have a positive balance; or the liquidation value of collateral pledged by a defaulting Participant, and other available cash balances, may not fully cover the credit exposure. After exhausting the available client collateral, Euroclear Bank would rely on its own capital to absorb any residual losses arising in such circumstances; and, in the most extreme circumstances, Euroclear Bank would ultimately rely on its recapitalisation and recovery capacity (see below).

Though Euroclear Bank did not establish a comprehensive credit loss allocation mechanism, it applies risk transfer mechanism in case of the default of certain central banks (listed on my.euroclear.com in the Market basics page of each market) or the default of our cash correspondent in a country where the application of sanctions or orders affects our capacity to properly manage the risks attached to the holding of long cash balances in such a country.

Euroclear Bank's capital is sized with reference to Euroclear Bank's risk profile, contemplating multiple Participant or market counterparty defaults. Routine assessments of capital adequacy are performed, including under the annual ICLAAP. These assessments are based on model outputs, validated by scenario analysis. The ICLAAP examines, among other things, Euroclear Bank's ability to withstand severe impairment of collateral values.

Replenishment and recapitalisation of financial resources and rules and procedures to address uncovered losses

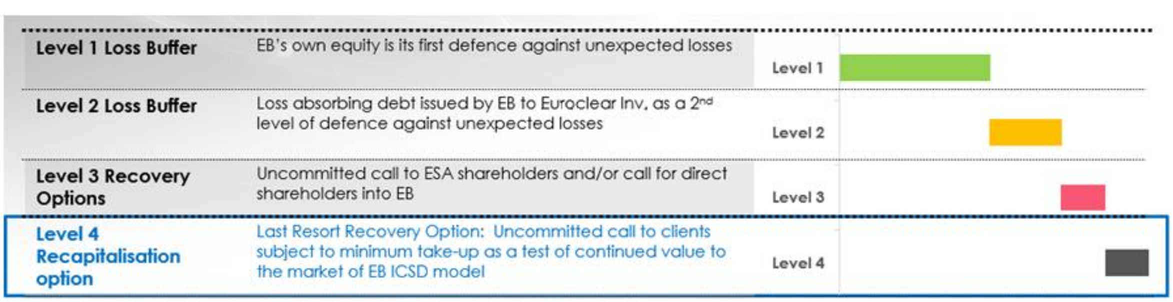
Depending on the severity of the loss, Euroclear Bank might need to trigger its RRW Plan. The RRW plan identifies Euroclear Bank's potential recovery capacity through the identification and assessment of a series of extreme measures which could be taken in an appropriate timeframe – depending on the situation at hand – to restore the financial soundness of Euroclear Bank, should a significant financial loss occur. The sufficiency of the recovery capacity is verified through the modelling of a series of hypothetical severe stress scenarios.

The options in the RRW plan include:

- recapitalisation measures to restore depleted capital and/or liquidity either via a capital injection from the Euroclear group, via an external issuance of additional capital or via a disposal of assets
- restructuring measures such as a reduction in services offered or headcount, these measures can be used to preserve resources, avoid further losses, or address structural weaknesses

More details of the RRW plan are included under Principle 3, KC 4.

At a high-level Euroclear Bank foresees the following loss waterfall:



Loss waterfall

In respect of Level 1 and Level 2 it should be noted that Euroclear Bank's capital is sized based on its ICLAAP and Regulatory requirements, further details of which can be found in Euroclear Bank's Pillar 3 disclosure.

Euroclear Bank's final measure in its 'loss waterfall' is primarily focused on recapitalisation post-loss absorption. In this respect Euroclear Bank envisages a call to Participants on an uncommitted basis to subscribe to new equity directly in Euroclear Bank. Such a subscription would require enough Participants to be willing to subscribe to the equity call in sufficient size for Euroclear Bank to meet the minimum regulatory capital requirement that would be required at that time.

If insufficient Participants were willing to subscribe to reach the required equity level, then Euroclear Bank would be forced to cancel the call and if not already done so, trigger the RRW plan.

Euroclear Bank's RRW plan documents the process for the transfer of assets which would be conducted by Euroclear Bank to perform an orderly wind down. An orderly wind-down is one whereby the ceasing of the critical functions of Euroclear Bank does not cause a sudden disruption to the wider financial markets. Therefore, as the orderly wind-down plan of Euroclear Bank is implemented Euroclear Bank's critical functions are gradually phased out. Capital and liquidity to support the period of the orderly wind-down are segregated from Euroclear Bank's day-to-day Risk Appetite and other regulatory requirements to ensure they are always available for this specific purpose.

Principle 5: Collateral

An FMI that requires collateral to manage its or its clients' credit exposure should accept collateral with low credit, liquidity and market risks. An FMI should also set and enforce appropriately conservative haircuts and concentration limits.

Key consideration (KC) 1: An FMI should generally limit the assets it (routinely) accepts as collateral to those with low credit, liquidity, and market risks.

Collateral framework

The general principles and framework under which financial assets can be accepted as collateral for credit exposures are set out in the *Financial Risk Board Policy* and *Policy Handbook*. The framework of policies and procedures is reviewed on a regular basis (see KC 1 Principle 4).

As a rule, all Participants' credit facility is fully secured. This is generally obtained via a pledge of the Participant's proprietary assets held with Euroclear Bank or other recourses that may be agreed upon on a case-by-case basis.

The collateral framework sets strict rules concerning the quality and quantity of securities used as collateral. Euroclear Bank only accepts collateral to secure credit exposures that meets the requirements of the Commission Delegated Regulation EU 390/2017 (implementing CSDR), which defines four collateral categories. A series of credit, market and liquidity indicators are used to determine the category allocation. Any collateral that cannot be categorised in one of the four categories is not accepted as collateral to secure credit exposure. Additionally, Euroclear Bank (i) sets rules for the type of collateral that can be used to cover its liquidity and credit risk, and (ii) defines concentration limits for the different collateral categories. Collateral concentration limits can also be set to avoid over-concentration on a specific type of collateral. The collateral concentration limits are system embedded, any exception follows a well-defined framework.

The key principles for collateral acceptance (securities and cash) are as follows, Euroclear Bank:

- has a reliable valuation methodology to derive the collateral value for each type of security, ensuring collateral value is adequately assessed under normal and stressed conditions (cf. KC 2 below)
- assesses the legal risks resulting from the acceptance of collateral (per relevant jurisdiction) and obtains an opinion on the enforceability of the collateral agreement
- actively monitors collateral to ensure that the accepted collateral covers market, credit and liquidity risk both in normal and stressed situations

Once the above aspects are covered, the security/cash goes through the normal collateral valuation process. Securities that are not eligible for collateral purposes (such as those which are not eligible in the four collateral categories) are valued at zero.

The results from the initial eligibility, collateral valuation and categorisation processes are then reviewed/updated on a daily basis, based on market data collected from data vendors, rating agencies and other departments within Euroclear Bank.

Euroclear Bank does not block specific assets as collateral but calculates the collateral value of all assets held in pledged accounts and ensures that sufficient collateral is available at any time in the Participant's account to cover its credit exposure on the latter.

Should the collateral value fall below the credit facility limit, the available credit for that Participant is automatically reduced to the level of available collateral.

Standard recourse collateral

Participants with a credit facility have the following options to secure their credit exposure in Euroclear Bank:

- proprietary collateral: Participants pledge assets (i.e. assets that may be used as collateral) that are segregated from assets that cannot be pledged (e.g. underlying Participants' assets). The vast majority of Participants use this type of recourse
- pledged cash deposits: a Participant deposits a certain amount (agreed upfront) of cash in one of its pledged cash accounts for a fixed period of time
- related/unrelated party arrangements: a borrowing Participant pledges proprietary collateral to support a credit facility extended to another borrowing Participant (of the same and/or different family[15]) provided that the appropriate documentation is in place (subject to legal enforceability validation by Legal division)
- customer assets pledge: a borrowing Participant pledges collateral which belongs to the borrowing Participant's customers provided such Participant has received the customers consent (subject to legal enforceability validation by Euroclear Bank's Legal division)

In the event of a Participant default, Euroclear Bank has the right to immediately appropriate pledged securities to offset any credit exposure that the defaulting Participant has. Euroclear Bank will then monetise and sell ('liquidate') the appropriated securities as soon as possible.

[15] *A 'family' is a group of connected entities, identified internally by a common Global Family Name (GFN), the top of the account hierarchy. Group of connected entities is defined in Article 4(1)(39) of Regulation (EU) 575/2013.*

Furthermore, with other counterparts, Euroclear Bank uses other mechanisms for securing its credit exposure such as:

- reverse repurchase agreements, used for treasury activity (and for one non-exempt central bank acting as a borrowing Participant)
- a Letter of Credit (LoC), used to secure the exposures Euroclear Bank has on relating to the interoperable link they mutually maintain (the Bridge) [see Principle 20]

Wrong-Way Risk

Wrong-way risk can be categorised as either specific, which arises when future exposure to a specific counterparty is positively correlated with the counterparty's probability of default due to the nature of the transactions with the counterpart or general, which arises when the likelihood of default of a counterparty is positively correlated with general market risk factors.

To address specific wrong-way risk, Euroclear Bank does not grant collateral value to securities belonging to the same family as the borrower (applicable for both borrowing Participants and treasury counterparties).

Euroclear Bank is mainly exposed to general wrong-way risk, which arises from a decrease in market value of the collateral used to cover credit exposure, upon default of the borrowing Participant. Euroclear Bank's credit department monitors on an ongoing basis the Participants' creditworthiness and their collateral portfolio through collateral concentration limits and thresholds to identify any significant wrong-way risk. Depending on the situation, remedial actions include additional haircuts, specific concentration limits and/or limiting the credit facility.

Key consideration (KC) 2: An FMI should establish prudent valuation practices and develop haircuts that are regularly tested and take into account stressed market conditions.

Valuation practices

Euroclear Bank assesses the collateral value of securities held in the Euroclear System on a daily basis by obtaining prices and determining the haircut that has to be applied on each security.

The Euroclear Bank collateral valuation system is based on an internally developed model, which enables it to automatically calculate haircuts on all securities, taking into account credit, country, market and liquidity risks. It protects Euroclear Bank against a drop in prices with a confidence level of 99% over a 10-day period (Value-at-Risk).

The market value of a security is the basis for the collateral calculation. Euroclear Bank marks its collateral using:

- observed market prices published by official sources and received from external providers
- evaluated prices computed by external providers
- internal quotation – based on transactions settled within the system
- theoretical quotation – internal calculation based on Net Present Value methodology

There is an internal selection and control process, which selects the 'best' quotation from among all the supplied quotations. The best quotation is defined as the quotation with the most recent quotation date and the most important priority level.

The primary model used to compute the collateral value to secure a Participant's borrowing (cash collateral and securities collateral value) is described below.

Cash collateral value

Collateral value = Market value x (1-currency margin)

The valuation of cash collateral depends mainly on the currency margin and the FX rate used.

The currency margin aims at covering the FX risk that exists if the collateral is in a different currency from the exposure it covers. For settlement currencies, a ten-day VaR based on FX volatilities of each currency is calculated. The minimum currency margin is currently set at 5% (e.g. for EUR and USD).

In addition to this ten-day VaR, Euroclear Bank can include an additional margin reflecting the liquidity of the currency.

Securities collateral value

Collateral value = Market value x SVE factor x (1-currency margin) x Own Account Margin x PVE

Euroclear Bank defines the collateral value based on the following parameters:

- the security's market value
- the Security Value Estimation (SVE) factor: it computes a haircut to protect Euroclear Bank from the credit, country, market and liquidity risks related to each security
- the currency margin: as for cash collateral

- the 'own security' margin: it is set to '0' if the Participant belongs to the same family as the issuer of the security
- the Portfolio Value Estimation (PVE): if necessary, it allows to decrease the overall collateral value at Participant portfolio level to compensate for some elements such as a lack of collateral diversification

Valuation is done based on both static and dynamic information received from external data providers and reviewed and controlled on a daily basis.

Euroclear Bank can override the automated valuation if it has reasons to consider that the current or future market price does not represent the true value (e.g. default or market stress).

Model parameters and methodologies are regularly reviewed. A series of actions has been implemented to ensure model adequacy. As an example, a review of liquidity risk module has been implemented to further improve this risk measure.

For reverse repurchase agreements used for treasury activity, collateral eligibility criteria are set based on instrument type, issuer, country of issuance, rating, maturity and currency risk, haircuts are then defined based on these criteria. On a daily basis at counterparty level, the effectiveness of the haircuts used for the reverse repo transactions are tested by comparing the evolution of the market value of the collateral i.e., securities leg) with the counter cash value of the reverse repo transaction (cash leg) over 10 days, to identify any significant deviations.

Sufficiency of haircuts and validation of haircut practices

- Security/currency haircuts back-test

The accuracy of the haircut valuation at security and portfolio level is verified via a back-testing exercise performed daily in order to identify overall model weaknesses and take actions on defects. The haircut valuation and currency back-tests aim at ensuring that the model continues to perform within a 99% confidence level over a 10-day period in order to cover normal and stressed market conditions.

To ensure validity of the model, back-testing methodologies are regularly reviewed to be in line with market's practices or to further improve model's monitoring as per internal guideline. A series of actions has been implemented to further improve adequacy of the back-test.

- Collateral stress test

The collateral stress test looks at the adequacy of Participants' collateral portfolio submitted to extreme events. The purpose is to verify if such portfolios are adequately diversified and if they would cover the credit exposures under extreme but plausible market conditions or whether credit exposures would become (partly) unsecured.

The potential impact on Participants' collateral portfolio is assessed when considering the observed collateral level but also when removing the over-collateralisation effect by capping the collateral at the level of the exposure.

The scenarios to simulate different possible extreme but plausible events include:

- default of several issuers
- country in financial distress
- currency depreciation
- interest rate shock
- stock indices shock
- model risk

- Model review

The Model Validation team of the Risk Management division reviews Euroclear Bank's collateral valuation model at least annually, in line with the *Model Risk Management Framework Policy Handbook*, and provides recommendations, if needed. Identified gaps are closely followed up and addressed as appropriate.

Key consideration (KC) 3: In order to reduce the need for pro-cyclical adjustments, an FMI should establish stable and conservative haircuts that are calibrated to include periods of stressed market conditions, to the extent practicable and prudent.

As detailed under KC 2, Euroclear Bank applies stringent upfront selection criteria and conservative haircut criteria aimed at ensuring the continuity and stability of its policy through various economic cycles even under stressed market conditions.

For securities eligible as collateral with a central bank, Euroclear Bank applies the central bank haircut as a minimum. Additionally, markets are monitored daily, this allows to take progressive measures before abrupt market movements i.e. avoiding pro-cyclicality.

Key consideration (KC) 4: An FMI should avoid concentrated holdings of certain assets where this would significantly impair the ability to liquidate such assets quickly without significant adverse price effects.

Collateral concentration relates to the diversity and quality of the collateral Euroclear Bank is relying on to mitigate both its credit and liquidity risk arising from exposure on borrowing Participants and treasury counterparts. The *Financial Risk Policy Handbook* provides the key principles for the management of collateral concentration limits and thresholds, which are set in line with Euroclear Bank's risk appetite to ensure Euroclear Bank's ability to liquidate securities pledged as collateral is not impaired and apply to the aggregate exposure on entity and/or family level. The internal policy framework foresees an annual review.

To ensure adequate quality and diversification of collateral, the Credit department is responsible for monitoring:

- the composition of Participant's collateral at portfolio level
- the composition of collateral received from treasury counterparties

On a daily basis, concentration thresholds and limits are used to identify potential concentration issues for the collateral received from borrowing Participants, as well as for the collateral received from treasury counterparties (monitoring is done both ex-ante and ex-post).

Euroclear Bank also performs ongoing market monitoring (e.g. financial press, evolution of stock prices, bond yields, CDS[16] spreads, etc.) that allows it to identify and anticipate issues and take mitigating measures if deemed necessary e.g. increasing haircuts and implementing additional concentration limits.

Any excesses or breaches will be escalated to the appropriate decision-making body in line with the applicable policy.

Key consideration (KC) 5: An FMI that accepts cross-border collateral should mitigate the risks associated with its use and ensure that the collateral can be used in a timely manner.

Collateral enforceability

As per CPMI IOSCO, cross-border collateral has at least one of the following foreign attributes: (a) the currency of denomination, (b) the jurisdiction in which the assets are located, or (c) the jurisdiction in which the issuer is established.

Financial collateral arrangements between Euroclear Bank and its Participants are governed by Belgian law. Relevant accounts for the purpose of financial collateral arrangements are maintained with Euroclear Bank in Belgium.

When accepting cross-border collateral, Euroclear Bank assesses legal risks resulting from conflict of laws regarding the validity of collateral arrangements and the enforceability of such collateral. These legal assessments are performed, with the assistance of external independent law firms, such that Euroclear Bank has a legal opinion for each of the jurisdictions in which Participants with a credit facility are located. These legal opinions ('collateral surveys') are renewed periodically taking a risk-based approach.

Also, in order to mitigate the impact of foreign exchange risk on cross-border collateral, a currency margin (which varies dependent on the currency) is applied to all collateral.

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[16] *Credit Default Swaps*

Ensuring collateral can be used in a timely manner

The timing to use (cross-border) collateral depends on the mechanism relied upon by Euroclear Bank and on the type of enforcement method:

- sale under the Collateral Agreement: in the event of a default, the Collateral Agreement allows Euroclear Bank to sell ('liquidate') the collateral of the defaulted borrowing Participant, after observing a 24 hours' notice period. If the securities are appropriated (see below) they can be sold immediately
- appropriation under the Collateral Agreement: in the event of a default, the Collateral Agreement allows Euroclear Bank to appropriate the collateral of the defaulted borrowing Participant. The appropriated collateral can be monetised immediately. After appropriation, Euroclear Bank will sell ('liquidate') the appropriated securities as soon as possible. No further formality or time period is required before proceeding with such sale after appropriation

Key consideration (KC) 6: An FMI should use a collateral management system that is well-designed and operationally flexible.

Euroclear Bank's collateral management process is automated and fully system-embedded and the collateral management team operating it is sufficiently staffed. The following tools contribute to a highly automated process:

- collateral valuation system. This tool is system-embedded and is automatically refreshed daily, however, it does allow for human intervention (to adapt parameters) when required
- a system-embedded tool which sets collateral criteria (such as concentration rules) at Participant level
- a tool which enables Euroclear Bank to appropriate and liquidate collateral when a Participant is in default

Principle 7: Liquidity risk

An FMI should effectively measure, monitor, and manage its liquidity risk. An FMI should maintain sufficient liquid resources in all relevant currencies to effect same-day and, where appropriate, intraday and multiday settlement of payment obligations with a high degree of confidence under a wide range of potential stress scenarios that should include, but not be limited to, the default of the client and its affiliates that would generate the largest aggregate liquidity obligation for the FMI in extreme but plausible market conditions.

Key consideration (KC) 1: An FMI should have a robust framework to manage its liquidity risks from its clients, settlement banks, nostro agents, custodian banks, liquidity providers and other entities.

The policy framework

Euroclear Bank has established a robust policy framework which enables it to identify, monitor and manage financial risks it is exposed to.

Policy framework hierarchy

The *Corporate Risk Board Policy* lays down the key principles on risk appetite and expectations on risk culture. These are further elaborated in the ERM Framework which provides a generic framework for the identification, measurement, monitoring and reporting of all risks relevant to Euroclear Bank. The *Financial Risk Board Policy* and *Policy Handbook* support both policies, setting out guiding principles for credit, liquidity and market risks as well as limits and collateralisation rules. This overarching policy is further complemented by Implementing Procedures which translate the guiding principles into detailed processes and procedures.

We elaborate on the policy framework under Principle 3 (Risk Management Framework).

Liquidity Risk Management Framework

The *Financial Risk Policy Handbook* sets out the overall framework and guidelines/principles with regards to the management of both liquidity and funding risks in all relevant and non-relevant currencies arising from Participants, from treasury activities as well as those arising from relations with cash correspondents, custodian banks and liquidity providers. The *Financial Risk Board Policy* is updated at least every three years and the *Financial Risk Policy Handbook* is reviewed and updated at least annually.

The Euroclear Bank Board of Directors defines Euroclear Bank's risk appetite framework, including the liquidity and funding risks tolerance levels. In that respect Euroclear Bank has a framework in place under which it defines and deploys limits per currency and family[17].

The Banking division implements the overall Liquidity Risk Management Framework through its Implementing Procedures which are reviewed yearly. Euroclear Bank also reviews its Contingency Funding Plan (CFP) annually (see KC 10 for further elaboration on the CFP).

Euroclear Bank sizes its qualified liquidity resources (QLR) on the basis of regular back-tests and stress tests as elaborated further below under this Principle. Back and stress tests results are regularly reported to Euroclear Bank's CALCO[18], as we detail it further in the next Key considerations.

To manage its liquidity risk, Euroclear Bank has implemented:

- system-embedded currency limits within the credit facility, based upon Euroclear Bank's capacity to generate liquidity for each currency and Euroclear Bank's risk appetite
- minimum collateral quality criteria for Participants to secure their line (e.g. ensuring a minimum percentage of assets monetiseable same day to mitigate liquidity risks)
- measures to further reduce the needs stemming from Participants' activity (e.g. reducing credit usage by adapting settlement instructions practices)
- structural measures such as Appropriation of Pledged Securities (APS) clauses in case of the default of the Participant
- warm standby facility with a liquidation manager to cope with large scale sale of collateral, in case of a Participant default, even under stressed market conditions

Euroclear Bank has implemented procedures to manage the day-to-day and intraday needs arising from the various entities it interacts with – e.g. Participants, settlement banks, cash correspondents and liquidity providers.

As one entity may play simultaneously multiple roles, Euroclear Bank is measuring on an ongoing basis the exposures on each entity across roles. Client exposure is managed using ex-ante limits determined on an aggregate and on a currency basis. Market facilities are in place for Treasury counterparts and facilities are also defined for cash correspondent exposure. All the facilities and limits are controlled ex-post. In case an exposure on a specific entity represents a risk beyond Euroclear Bank's appetite, additional measures will be taken.

Considering that Euroclear Bank settles transactions in multiple currencies, Euroclear Bank has identified the list of relevant currencies for liquidity management purposes, based on the requirements set under Article 36(8) of Regulation (EU) 2017/390. The list of relevant currencies is re-assessed on a monthly basis and is published on my.euroclear.com.

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[17] *A 'family' is a group of connected entities as defined in Article 4(1)(39) of Regulation (EU) 575/2013.*

[18] *The CALCO is a sub-committee of the Euroclear Bank MC with some delegated authority and which provides assurance to the Euroclear Bank MC on liquidity, credit and market risks as well as capital matters in line with Euroclear Bank's risk appetite (see Principle 2 for more details).*

Euroclear Bank's liquidity needs are mainly intraday, resulting from secured intraday credit extended to Participants, in order to ensure smooth settlement and absorb the time gap between cash debits and credits. Other potential sources of intra-day liquidity need stem from Euroclear Bank's treasury activities.

Liquidity needs may also occur over a multi-day horizon, for example linked to operations settling in the future, such as securities lending and borrowing activity and outstanding treasury activity. These operations are considered in the multi-day liquidity stress test.

In KC 3, we describe how the minimum liquidity resources for both relevant and non-relevant currencies are sized.

Euroclear Bank, being subject to European banking legislation, complies with additional requirements related to liquidity risk management such as the Internal Capital and Liquidity Adequacy Assessment Process (ICLAAP).

Stress testing framework

The *Corporate Risk Board Policy* contains the high-level principles of the stress-testing framework and was approved by the Euroclear Bank Board of Directors. The *Corporate Risk Board Policy* is in line with the minimum requirements set by the *Corporate Risk Group Policy*. There is also a dedicated *Stress Testing Policy Handbook* in place.

Please see also KC 7, which provides more details about a stricter testing framework that has been implemented since 2021 and which ensures that Treasury department regularly tests its procedures for accessing its liquid resources from the different liquidity providers.

Governance

Framework documents are approved by relevant governance bodies, such as Euroclear Bank's Management Committee, the Euroclear Bank Board and are reviewed at least every three years or in case of material changes. Additionally operational processes are designed and reassessed on a regular basis to actively monitor and minimise credit and liquidity risks. We elaborate on governance aspects in Principle 2 (Governance) and Principle 3 (Risk management framework).

Key consideration (KC) 2: An FMI should have effective operational and analytical tools to identify, measure, and monitor its settlement and funding flows on an ongoing and timely basis, including its use of intraday liquidity.

Euroclear Bank uses a Liquidity Management Solution, which allows the Treasury department to identify, monitor, steer and control cash flows in a real-time mode, assisting it to manage its flows within pre-established boundaries and to prioritise critical payments.

The Liquidity Management Solution, measures the actual and projected cash positions, resulting from movements from different activities (Money Transfer, Settlement, Custody, etc.). It is used to monitor the cash positions, identify issues throughout the day and anticipate the liquidity impacts from upcoming events in the next couple of days.

As part of the intraday monitoring, Euroclear Bank can consult its capacity linked to the availability of the various liquidity resources (committed and uncommitted) and compare them with its needs, to better assess the liquidity risk, in case of stress.

Euroclear Bank has the following tools to identify, measure and monitor its intra-day liquidity needs:

- Analytical tools – in real time
    - Report assessing intra-day current and remaining capacity by currency
    - Report forecasting the intra-day liquidity evolution based on historical events and patterns

- Operational tools – in real time
    - Liquidity Dashboard (LD): the LD tool gives a parallel view on actual and projected balances
    - Nostro flow control (NFC): the NFC tool performs the liquidity check and releases the payment if there is sufficient liquidity available at cash correspondent side. The NFC provides ex-ante liquidity control (i.e. prior to payments' release) at currency level (i.e. payment) and/ or nostro level (i.e. actual balance + credit line) and makes it possible to take preventive action to manage the liquidity risk
    - External Graphic User Interface (GUI) provided by central banks and CSDs which assist in managing the actual and projected balances and complement the use of the Liquidity Dashboard

- Analytical tools – ex-post

    Euroclear Bank measures and monitors available QLR (start of the day), peak long and short balances, outflows and overnight liquidity risk

Euroclear Bank ensures that cash positions are well within the cash correspondent facilities and that the cash is in the right place at the right time, in order to support its obligations.

In case of excessive cash balances (long or short), Euroclear Bank will follow-up with the relevant party (Participant, cash correspondent, etc.) to ensure the cash position can be brought in line with the risk appetite.

Key consideration (KC) 3: A payment system or SSS, including one employing a DNS mechanism, should maintain sufficient liquid resources in all relevant currencies to effect same-day settlement, and where appropriate intraday or multiday settlement, of payment obligations with a high degree of confidence under a wide range of potential stress scenarios that should include, but not be limited to, the default of the client and its affiliates that would generate the largest aggregate payment obligation in extreme but plausible market conditions.

Euroclear Bank does not employ a DNS mechanism. The Euroclear Bank Securities Settlement System is a Delivery vs. Payment (DVP) Model 1. More information is provided within these disclosures under Principle 12.

Minimum liquidity resource requirements

Euroclear Bank sizes its QLR in order to withstand the liquidity needs resulting from a defined liquidity stress event (i.e. default at family level). This is tested using back-testing scenarios:

- Cover 1 (i.e. a CPMI-IOSCO requirement) back-tests performed on a daily basis, simulating the default of a Participant with the largest payment obligation at family level by currency and across currencies (aggregated)
- Cover 2 (i.e. a CSDR requirement) back-tests performed on a daily basis, simulating the default of two Participants with the largest payment obligations at family level by relevant currency (as defined by CSDR) and across currencies (aggregated)

Euroclear Bank has policies, procedures and controls in place, to ensure on an on-going basis that sufficient liquid resources are available, in order to comply with the liquidity risk framework set forth by CSDR and CRR and its own Risk Appetite.

In order to have sufficient funding sources under stress, Euroclear Bank relies on QLR, as follows:

- own QLR: the liquidity buffer funded from its capital and the debt issuance program, committed unsecured facilities and the intragroup contingent loan
- in case of stress linked to default of Participant(s): pledged securities from Participants that can be monetised same day through committed facilities, central bank access and, in case of Cover 2, also through PAFAs[19] matching collateral eligibility criteria

While measures are taken to avoid such a situation, the Policy requires any gap identified in a liquidity back-test or a stress-test, whether at currency or aggregate levels, should be reviewed and an action plan will be defined and approved by the relevant governance body.

[19] *PAFAs Prearranged And highly reliable Funding Arrangements.*

To cover the day-to-day liquidity needs stemming from granting credit to Participants, Euroclear Bank mainly relies on other clients' long balances, complemented by uncommitted and unsecured intra-day credit facilities from its cash correspondent banks and settlement banks.

In case of stress, Euroclear Bank will activate its contingency facilities, both uncommitted and committed. To ensure these facilities are available and work in practice when needed Euroclear Bank has a regular program of testing both committed and uncommitted facilities.

Other stress tests

Euroclear Bank assesses the adequacy of its QLR in a range of stress events impacting negatively Euroclear Bank's liquidity and/or funding position. The outcome of liquidity stress-testing scenarios is analysed and recommendations are made accordingly (e.g. on the size of liquidity resources).

The range of other stress tests includes the following scenarios:

- the temporary failure or inability of one of Euroclear Bank's liquidity providers, cash correspondents, or any related infrastructure, including CSDs with whom it has an interoperable link
- simultaneous pressures in funding and asset markets, including a decrease in the value of the QLR
- stress in foreign exchange convertibility and access to foreign exchange markets
- adverse changes in reputation causing sudden flight of Participant cash balances or certain liquidity providers to withdraw liquidity
- relevant peak historic price volatilities of collateral or assets as recurrent events
- changes in the credit availability in the market
- collateral valuation stress test

Key consideration (KC) 4 - Not applicable to Euroclear Bank.

Key consideration (KC) 5: For the purpose of meeting its minimum liquid resource requirement, an FMI's qualifying liquid resources in each currency include cash at the central bank of issue and at credit worthy commercial banks, committed lines of credit, committed foreign exchange swaps, and committed repos, as well as highly marketable collateral held in custody and investments that are readily available and convertible into cash with prearranged and highly reliable funding arrangements, even in extreme but plausible market conditions. If an FMI has access to routine credit at the central bank of issue, the FMI may count such access as part of the minimum requirement to the extent it has collateral that is eligible for pledging to (or for conducting other appropriate forms of transactions with) the relevant central bank. All such resources should be available when needed.

Euroclear Bank has the following (non-exhaustive) own QLR[20]:

- own cash deposited at a central bank of issue or other creditworthy financial institutions, not stemming from Participants' long cash balances
- committed lines of credit or similar agreements
- assets and collateral which fulfil credit, market and liquidity requirements and which are readily available and convertible into cash on a same day basis through PAFAs or central bank access

Minimum quality requirements set on collateral deposited by Participants allow Euroclear Bank, in stress events linked to default of Participant(s), to monetise same-day high quality collateral with its central bank (ESCB-eligible securities[21] or BOE-eligible securities[22]) or with committed repo facilities and pre-arranged and highly reliable funding arrangements.

Euroclear Bank relies on different liquid resources to cover its liquidity needs arising from day-to-day operations and to comply with the 'stress scenarios' listed in KC 3 above.

Euroclear Bank is taking multiple initiatives on an ongoing basis to mitigate liquidity risks and ensure its capacity is sufficient to withstand a stress scenario by (1) decreasing the liquidity needs and (2) increasing the liquidity resources.

To increase liquidity resources and meet the requirements set under the Principles for Financial Market Infrastructure, Euroclear Bank has taken several initiatives such as:

- signing of committed unsecured facilities, to increase the capacity under stressed conditions
- signing of committed FX swap lines, to address the multi-currency risk and the mismatch between currency of exposure and currency of the collateral
- signing of committed secured facilities, to increase the capacity to monetise Euroclear Bank's securities and Participants' pledged collateral under stressed conditions
- implementing a strong operational set up to access the Repo market by signing Global Master Repurchase Agreements with a diversified base of counterparts.
- implementing system-embedded collateral criteria, ensuring a minimum percentage of monetiseable same-day assets being pledged for the purpose of a secured credit line
- ensuring that sufficient cash is invested on an overnight basis (next-day availability) and more secured investments are executed against same-day monetizable assets
- optimising the composition of Euroclear Bank's portfolio of securities

[20] *In line with FRPH definition, and aligned with Art. 34 of Commission Delegated Regulation (EU) 2017/390*
[21] *Marketable financial securities accepted as collateral by the Eurosystem as assessed by the national central banks according to the criteria specified in the Eurosystem legal framework for monetary policy instruments.*
[22] *Securities eligible with the Bank of England to support the Operational Standing Facilities, Level A collateral consists of assets expected to remain liquid in almost all market conditions, such as high-quality sovereign debt trading in very deep markets.*

In order to establish that the pre-arranged funding arrangements are highly reliable in extreme but plausible market conditions, Euroclear Bank ensures that each liquidity provider:

- has a central bank access to the currency of the facility, which increases the likelihood of receiving the cash from such entities in times of stress
- is considered a creditworthy financial institution
- is tested regularly (quarterly for committed facilities and semi-annually uncommitted for PAFA).

Based on the Appropriation of Pledged Securities (APS) agreement, Euroclear Bank can immediately appropriate and monetise pledged collateral from defaulted Participants, with:

- the NBB for ESCB-eligible collateral
- the BOE for level A collateral criteria
- liquidity providers via committed repo arrangements and pre-arranged and highly reliable funding arrangements.

The effective availability of the committed and uncommitted liquidity sources depends on:

- the quality of the securities (from Participants, reverse repos, treasury book and investment book)
- the cut-off time by liquidity provider and/or by currency
- the activation time required for committed and uncommitted facilities the nominal currency of the securities and of the committed facilities

Key consideration (KC) 6: An FMI may supplement its qualifying liquid resources with other forms of liquid resources. If the FMI does so, then these liquid resources should be in the form of assets that are likely to be saleable or acceptable as collateral for lines of credit, swaps, or repos on an ad hoc basis following a default, even if this cannot be reliably prearranged or guaranteed in extreme market conditions. Even if an FMI does not have access to routine central bank credit, it should still take account of what collateral is typically accepted by the relevant central bank, as such assets may be more likely to be liquid in stressed circumstances. An FMI should not assume the availability of emergency central bank credit as a part of its liquidity plan.

Euroclear Bank's supplemental liquid resources are composed of:

- borrowing capacity and uncommitted cash correspondent lines
- Participants' long balances (as cash or invested in assets). In case of an Unforeseen Liquidity Shortfall event (see KC 10), Euroclear Bank may rely on Participants' long balances until such shortfall is resolved, as set in the Terms and Conditions

In addition, even if they do not create extra liquidity capacity, the uncommitted FX swap facilities allow to convert a cash amount in a currency into another currency

These liquid resources may not be available under stressed conditions and may not be considered when assessing Euroclear Bank's capacity to cope with a liquidity/funding stress event as part of the different stress testing scenarios.

A methodology has been implemented to assess on a semi-annual basis, the uncommitted liquidity capacity through repo and FX swap.

Euroclear Bank ensures a close follow-up of the additional liquidity capacity and can decide whether actions are required to maintain or adapt this capacity.

In both day-to-day and stress situations, Euroclear Bank would first try to use the uncommitted facilities (i.e. the supplemental liquid resources) before using the QLR even if, in stress situations, the likelihood of using uncommitted facility is lower than in a day-to-day situation.

Key consideration (KC) 7: An FMI should obtain a high degree of confidence, through rigorous due diligence, that each provider of its minimum required qualifying liquid resources, whether a client of the FMI or an external party, has sufficient information to understand and to manage its associated liquidity risks, and that it has the capacity to perform as required under its commitment. Where relevant to assessing a liquidity provider's performance reliability with respect to a particular currency, a liquidity provider's potential access to credit from the central bank of issue may be taken into account. An FMI should regularly test its procedures for accessing its liquid resources at a liquidity provider.

Euroclear Bank manages provider relationships with a wide range of liquidity providers consistent with its *Network Management Policy Handbook*.

Euroclear Bank ensures the ability of its liquidity providers to manage associated liquidity risk through a thorough due diligence process.

Euroclear Bank imposes the following rules to its committed liquidity providers:

- the entity or another entity of the group must have access to credit from the central bank of the currency of the facility
- the entity is a credit worthy financial institution (cf. Due Diligence Process)
- a written contract is put in place with detailed rights and obligations of both parties
- the liquidity facility provided is regularly tested

A new and more strict testing framework has been implemented in 2021 which includes a regular multi-activation of committed and uncommitted (PAFAs) facilities, yearly testing of a Cover 2 scenario and repo market deepness assessments to evaluate the availability of liquidity to Euroclear Bank and potentially adjust the repo market access assumptions that are used to calibrate the currency limits to Participants. The testing results are presented to the CALCO on a regular basis.

All committed facilities contracted with liquidity providers are tested on a quarterly basis to make sure that the liquidity can timely be sourced when needed and to ensure the liquidity providers understand and manage their associated liquidity risk. Once a year all the committed facilities are tested on the same day and also during the Cover 2 scenario testing, the multi activation of some facilities in order to close the liquidity shortfall on the same day is tested. For the latter, Euroclear Bank CALCO validates the scope and adequacy of the CFP testing.

In addition, the uncommitted PAFA set-up in the Repo Market with counterparts with central bank access is tested regularly: every Tri-party PAFA is tested at least once every six months from an operational point of view and on a semi-annually basis, a repo market deepness access assessment is performed as well to estimate funding capacity (volumes and prices) from all Tri-party counterparts. Also, true cash givers are identified and developed by executing real cash taking transactions. Every six months the Liquidity Management Desk confirms the Cash Correspondent lines in the relevant currencies, in particular with Cash Correspondents with whom we have a GMRA in place.
Operational readiness, training and documentation is validated during the combined testing of facilities and supporting tools, the latter being tested yearly as well.

For committed facilities, the test is deemed successful if the provider has respected the rules set in the contract.

The *Financial Risk Policy Handbook* defines concentration limits to avoid over-reliance on specific liquidity providers, both at the level of major[23] currencies and at aggregated level across all currencies, especially on those entities that are borrowing Participant in Euroclear Bank.

Key consideration (KC) 8: An FMI with access to central bank accounts, payment services, or securities services should use these services, where practical, to enhance its management of liquidity risk.

Euroclear Bank has access to the Eurosystem through accounts at NBB, both in TARGET2 and TARGET2 Securities and is its own settlement bank in the major markets (France, Germany, Netherlands, Belgium, Italy, Spain, Austria, Luxemburg, Finland, etc.). To further mitigate intra-day risk on the cash correspondent banks we have further:

- centralised the incoming payments in EUR from clients through our NBB accounts
- shifted the EUR redemptions of securities held by our Participants to our T2S Dedicated Cash Account (NBB)

[23] *Currencies are considered as major when they represent at least the top 50% of the most relevant currencies (Article 36(8) of Commission Delegated Regulation (EU) 2017/390)*

Euroclear Bank has an account with the Bank of England to manage its cash and Participant settlement in the CREST system[24]. Intraday and end of day secured credit is allowed. In addition, we have shifted the GBP Eurobonds redemptions of securities held by our Participants to our CHAPS account.

Euroclear Bank has an account with the Central Bank of Denmark to manage its intraday cash and Participant settlement in T2S. To mitigate intra-day risk on the cash correspondent banks, we centralise our cash in DKK with the Central Bank of Denmark.

Euroclear Bank has a direct access to DTC[25], which allows to manage our USD liquidity in a timely and efficient manner. As such, we rely less on commercial banks and reduce our intra-day risk on them.

Euroclear Bank seeks to further increase the number of central banks to which it can have direct access to raise liquidity (intraday and overnight), or has the possibility to leave cash overnight to mitigate the risk linked to cash correspondents (e.g. TRY, ARS, AED, SAR).

Our strategy is to maximise the services and accesses to the central bank and assess Euroclear Bank's minimum central bank access requirement for a given link. For new market links, Euroclear Bank sets the central bank access as prerequisite.

In addition, Euroclear Bank will attempt to become its own Settlement Bank where settlement cross-border volumes are substantial.

Key consideration (KC) 9: An FMI should determine the amount and regularly test the sufficiency of its liquid resources through rigorous stress testing. An FMI should have clear procedures to report the results of its stress tests to appropriate decision makers at the FMI and to use these results to evaluate the adequacy of and adjust its liquidity risk-management framework. In conducting stress testing, an FMI should consider a wide range of relevant scenarios. Scenarios should include relevant peak historic price volatilities, shifts in other market factors such as price determinants and yield curves, multiple defaults over various time horizons, simultaneous pressures in funding and asset markets, and a spectrum of forward-looking stress scenarios in a variety of extreme but plausible market conditions. Scenarios should also take into account the design and operation of the FMI, include all entities that might pose material liquidity risks to the FMI (such as settlement banks, nostro agents, custodian banks, liquidity providers, and linked FMIs), and where appropriate, cover a multiday period. In all cases, an FMI should document its supporting rationale for, and should have appropriate governance arrangements relating to, the amount and form of total liquid resources it maintains.

Euroclear Bank uses stress testing and sensitivity analysis to assess the potential liquidity impact and the adequacy of its QLR in each currency under a variety of extreme but plausible scenarios, based on both observed exposures (back-tests) and stressed exposures/situations (stress tests). Stress testing is an integral part of the ICLAAP annual review of the adequacy of the liquidity framework and resources.

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[24] *CREST: Settlement system of Euroclear UK and International*

[25] *DTC: The Depositary Trust Company a US Central Securities Depositary*

Euroclear Bank runs a daily back-test assessing whether the QLR are sufficient to withstand the liquidity needs resulting from a defined liquidity stress event:

- Cover 1 (i.e. a CPMI-IOSCO requirement) back-tests performed on a daily basis, simulating the default of a Participant with the largest payment obligation at family level by currency and across currencies (aggregated)
- Cover 2 (i.e. a CSDR requirement) back-tests performed on a daily basis, simulating the default of two Participants with the largest payment obligations at family level by relevant currency and across currencies (aggregated)

At group entity level, exposures considered in the back-tests arise from the liquidity exposure in their role of Participants, treasury counterparts and cash correspondents. If an entity of the group in default is also a liquidity provider, the liquidity facility is disregarded accordingly.

Euroclear Bank seeks to ensure on an on-going basis to have sufficient liquid resources to cope with a Cover 1 scenario in all currencies (relevant and non-relevant) in which credit is granted to borrowing Participants, and a Cover 2 scenario for relevant currencies.

The results of the back-testing exercise are reported daily to the Euroclear Bank Management Committee and reviewed and reported monthly by the Risk Management division to the CALCO and semi-annually to the Management Committee. The governance bodies determine whether remediating action is required for any gaps identified by the back-tests.

In addition to the daily bask-test, Euroclear Bank assesses the adequacy of its QLR in a range of stress scenarios, as part of the annual stress testing program which feeds its ICLAAP. The outcome of liquidity stress-testing scenarios is analysed and recommendations are made accordingly (e.g. on the size of liquidity resources).

The *Financial Risk Policy Handbook* sets the list of minimum stress events that need to be considered. In addition, annually, Euroclear Bank assesses the feasibility to extend the list of scenarios to incorporate additional stress events that would be relevant for Euroclear Bank. Euroclear Bank also combines multiple scenarios/stress tests to build master scenarios dealing with either concomitant or subsequent stress across the entire risk catalogue (including liquidity and funding risks).

The range of stress tests includes the following scenarios:

- the temporary failure or inability of one Euroclear Bank's liquidity providers, cash correspondents, or any related infrastructure, including interoperable CSDs
- simultaneous pressures in funding and asset markets, including a decrease in the value of the Qualifying Liquid Resources (QLR)
- stress in foreign exchange convertibility and access to foreign exchange markets
- adverse changes in reputation causing sudden flight of Participant cash balances or certain liquidity providers to withdraw liquidity
- relevant peak historic price volatilities of collateral or assets as recurrent events
- changes in the credit availability in the market

Before performing a stress test, all assumptions and parameters are systematically and completely reviewed during the stress test scenario definition and are approved by the relevant governance bodies.

Although focus is set on a one-day horizon for the back-tests, stress tests assess the potential liquidity and funding implications over a longer period of time, when relevant (e.g. up to the expected liquidation period in case of default and collateral appropriation).

Stress-tests are not only allowing the assessment of the adequacy of liquid resources vis-à-vis intraday liquidity needs but also to address the operational processes to cope with the liquidity stress events.

In its recovery plan, Euroclear Bank assesses the expected implications of each scenario to capture the second round/contagion effects from both a qualitative and quantitative perspective.

If the results of the liquidity back-tests and stress tests highlight some shortfalls or shortcomings, the Banking Division and/or Risk Management provide recommendations to the Euroclear Bank CALCO as to the measures that could be taken to address the situation, as appropriate.

In the context of the scenario analysis methodology, we have rolled out a structured process for gathering systematically relevant insights in order to generate a scenario. An important part of this is horizon scanning (monitoring of the global macro environment). Horizon Scanning is performed throughout the year to identify the most relevant developments, which are then reported annually to Management and Board Committees. Relevant developments are also discussed with scenario experts (during the annual scenario review in the context of the ICLAAP and RRW plan).

In the context of a program to improve its stress testing framework and infrastructure, Euroclear Bank is further elaborating its capacity to assess second round effects (enabling stress testing over several days, increasing the frequency and flexibility of stress testing).

Key consideration (KC) 10: An FMI should establish explicit rules and procedures that enable the FMI to effect same day and, where appropriate, intraday and multiday settlement of payment obligations on time following any individual or combined default among its clients. These rules and procedures should address unforeseen and potentially uncovered liquidity shortfalls and should aim to avoid unwinding, revoking, or delaying the same-day settlement of payment obligations. These rules and procedures should also indicate the FMI's process to replenish any liquidity resources it may employ during a stress event, so that it can continue to operate in a safe and sound manner.

Euroclear Bank has a Contingency Funding Plan (CFP) that will be triggered following, amongst other scenarios, an individual or a combined default among its Participants, if this threatened its liquidity position.

The Contingency Funding Plan (CFP) is approved by the Euroclear Bank Management Committee and the Euroclear Bank Board. It sets a series of stress events that Euroclear Bank should be able to cope with, without the need to activate its recovery procedures (i.e. all liquidity generating and liquidity preservation actions available to manage a liquidity/funding crisis) and is reviewed annually.

The purpose of the CFP is to:

- establish a monitoring program to identify, analyse, report, escalate and respond to, in a timely manner, Euroclear Bank-specific or market-wide events (triggers) that could lead to a liquidity strain under progressively worsening stress conditions, where different levels of escalation and required responses incorporate both objective measures and management discretion
- provide an overview of the governance process in place in crisis situations
- identify significant Liquidity Stress Events and outline a framework for assessing their impact on Euroclear Bank's ability to maintain access to funding markets, preserve its liquidity position, meet its financial obligations and continue to perform its role as a CSD, including the provision of ancillary banking services
- provide a flexible menu of management actions aligned with Euroclear Bank's role as a CSD based on current and potential sources of liquidity and a framework to assess the availability and liquidity value of such sources during Liquidity Stress Events
- describe the process for selecting, prioritising and executing management actions, including replenishment of liquidity sources, during Liquidity Stress Events and the monitoring of such actions effectiveness when executed
- establish the governance process for the maintenance, review and approval of this CFP, including the role of the Euroclear Bank Board and Board Committees
- establish the roles of Euroclear Bank Management Committee, Euroclear Bank CALCO and the Liquidity Crisis Management Team (LCMT) to direct the execution of management actions and the Euroclear Bank divisions to execute such actions and report back on their effectiveness
- establish and maintain an Euroclear Bank CFP Communication Plan
- establish the requirement for a CFP testing program, including the periodic liquidation of liquid securities and testing of committed lines (including repos and foreign exchange swaps) on a sample basis

The CFP is a multi-layered plan comprising a Board level document (framework document), which is complemented by:

- the daily liquidity dashboard for monitoring Euroclear Bank's liquidity situation
- a related procedure on management actions and replenishment actions in case of crisis (i.e. a Replenishment Plan)

At a high level Euroclear Bank foresees the following liquidity waterfall:

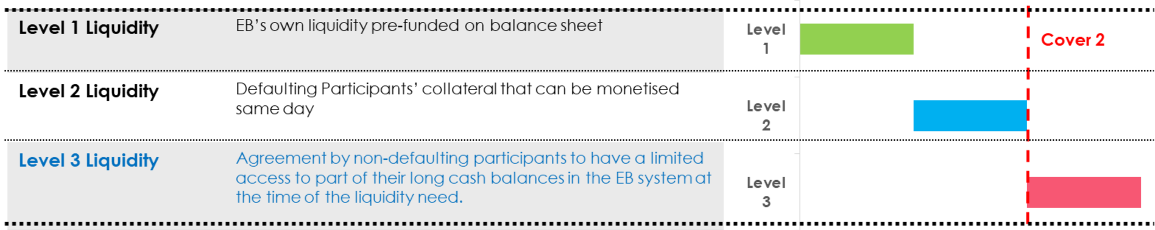

Figure 5 Liquidity waterfall

In respect of Level 1 and Level 2 it should be noted that Euroclear Bank's liquidity is sized based on its Internal Liquidity Adequacy Assessment Process and Regulatory requirements. Specific regulatory requirements include the Liquidity Coverage Ratio Requirements as required by the Capital Requirement Regulation (EU 2013/575), as well as the Cover 2 test required by the Central Securities Depository Regulation (EU 2017/390). The latter drives Euroclear Bank's requirements under Level 2 Liquidity and ensures that Euroclear Bank can by design survive the default of the two Participants to which it has the largest intraday liquidity exposure.

The Level 3 liquidity measure is designed to address unforeseen liquidity shortfall scenarios and would only be used when the other two Levels have been exhausted. Euroclear Bank will only resort to the unforeseen liquidity shortfall measure if it has exhausted its own liquidity, after taking all possible measures to reduce its liquidity needs (e.g. credit line management and debit positions management) and increase its available liquidity (e.g. through committed and uncommitted facilities). This measure is a contractual arrangement with Participants as stipulated in the *Terms and Conditions governing use of Euroclear* and *Operating Procedures of the Euroclear System*.

To cover the amount of such liquidity shortfall, Euroclear Bank will use the funds available from its Participants at the time of such shortfall and until the liquidity shortfall is resolved. In such case, the cash will be blocked in the currency (ies) of the shortfall, on a pro-rata basis, across Participants.

In addition, as part of the Euroclear Bank Recovery Plan, Euroclear Bank assesses annually the liquidity impact of a beyond Cover 2 scenario, taking into account the two largest Participants' exposures plus the CCP with the largest exposure.

Principle 8: Settlement finality

An FMI should provide clear and certain final settlement, at a minimum by the end of the value date. Where necessary or preferable, an FMI should provide final settlement intraday or in real time.

Key consideration (KC) 1: An FMI's rules and procedures should clearly define the point at which settlement is final.

Settlement finality is governed by the EU Settlement Finality Directive 98/26/EC which is implemented into Belgian Settlement Finality law of 28 April 1999. This legislation effectively ensures protection of irrevocability and finality of transfer orders executed in a securities settlement system ('System'). Euroclear Bank operates a Securities Settlement System (Euroclear System) and offers settlement as an Issuer CSD. The Euroclear System, operated by Euroclear Bank, is designated as a 'System' under Belgian law.

In case of insolvency proceedings affecting a Participant to the System, the law refers to the rules of the System to determine the moment of (i) entry of transfer orders in such System, (ii) irrevocability of transfer orders and (iii) finality of transfer orders executed by the System. The finality rules of the Euroclear System are set out in the *Terms and Conditions governing use of Euroclear and in the Operating Procedures of the Euroclear System*. This documentation is available on my.euroclear.com.

The Euroclear Bank Securities Settlement System is a Delivery vs. Payment (DVP) Model 1. More information is provided within these disclosures under Principle 12.

Euroclear Bank also maintains links with other CSDs (directly or through an intermediary) to enable its Participants and Participants of such other CSDs to transfer securities to one another. One of those links (link with CBL) qualifies as interoperable in the meaning of CSDR. For securities held through links with other CSDs (directly or through an intermediary), the laws that are applicable to the local CSD apply to the local settlement of operations concerning these securities. The contractual framework of the Euroclear System explains how local laws impacts cross-border settlement and its impact on settlement finality. For fund shares deposited with Euroclear Bank using the FundSettle service, the contractual framework also specifies the settlement process for settlement of such fund shares.

For the links it maintains, Euroclear Bank does not make provisional credits of either cash or securities on Euroclear Bank client accounts with the exception of some specific cases of credit of securities for the link to the DTC. In this case, Euroclear Bank prohibits retransfer of these securities until they become final. The reader can find further considerations on links in Principle 20.

The point of finality of a transfer depends on whether the transfer is done within the Euroclear System (i.e. transfer between two Participants having an account in Euroclear Bank, referred to in the *Operating Procedures of the Euroclear System* as internal settlement), via the Bridge (i.e. transfer between a Euroclear Bank Participant and a CBL Participant, referred to in the *Operating Procedures of the Euroclear System* as Bridge settlement), via another link (i.e. transfer between an Euroclear Bank Participant and a Participant of the other CSD with whom Euroclear Bank maintains a link, referred to in the *Operating Procedures of the Euroclear System* as external settlement) or through the FundSettle service:

- internal settlement: the settlement of an internal Instruction is final upon execution and the credit/debit of Accounts. As such, the simultaneous transfer of securities and transfer of cash (if against payment) is final at such time. Provided that all conditions for settlement are fulfilled (e.g. instructions are matched, sufficient cash/credit or securities are available, settlement date has been reached), this execution of internal settlement instructions and generation of records occurs either:
  - at the end of an overnight securities settlement processing during the night, or
  - in real time, during the day, for the real-time processing

- Bridge settlement: the *Operating Procedures of the Euroclear System* detail the finality rules for receipts and deliveries from and to CBL over the Bridge. Securities transfers over the Bridge in the overnight batch are final upon confirmation of acceptance of securities by the receiving CSD. Securities transfers over the Bridge in the real-time processing are final upon successful execution and credit to the Securities Clearance Account (for receipts) or when CBL records the credit of securities (for deliveries)
- external settlement: settlement and finality occur in the local market in accordance with local market rules and practice. This is also the case for fund shares deposited with Euroclear Bank in the FundSettle service. For links, the online market guides provide detailed documentation available on my.euroclear.com

Key consideration (KC) 2: An FMI should complete final settlement no later than the end of the value date, and preferably intraday or in real time, to reduce settlement risk. An LVPS or SSS should consider adopting RTGS or multiple-batch processing during the settlement day.

Euroclear Bank's settlement process consists of an overnight securities settlement process followed by a real-time gross settlement process.

The overnight securities settlement process runs from around 22:30 on the day before the settlement (S-1) to around 01:30 on the settlement day (S), Settlement finality occurs at the end of the overnight process.

The daytime process runs from around 01:30 to 19:30 Central European Time and provides final settlement in real-time.

The Euroclear System recycles unsettled instructions from one process and one day to another until the settlement or the cancellation of the instruction.

Participants will receive real-time notifications of this settlement through the communication channel they subscribed to.

To facilitate settlement efficiency, Euroclear Bank offers the following services/features:

- credit facilities: Euroclear Bank may - under certain conditions and subject to limits (see Principle 4) - provide credit to the Participant
- Securities Lending and Borrowing Programme: Participants may also - under certain conditions - borrow securities by subscribing to the Securities Lending and Borrowing Programme
- settlement optimisation features, such as technical netting and partial settlement which enable earlier settlement
- hold and release: which enables earlier matching

Key consideration (KC) 3: An FMI should clearly define the point after which unsettled payments, transfer instructions, or other obligations may not be revoked by a Participant.

Internal, Bridge and external settlement instructions are irrevocable when they can no longer be cancelled unilaterally by Participants as described in the *Operating Procedures of the Euroclear System* which are publicly available on my.euroclear.com.

Once an instruction is matched it can only be cancelled bilaterally i.e., only if the counterparty also requests the cancellation. The rules relating to cancellation are described in the *Operating Procedures of the Euroclear System*.

Principle 9: Money settlement

An FMI should conduct its money settlements in central bank money where practical and available. If central bank money is not used, an FMI should minimise and strictly control the credit and liquidity risk arising from the use of commercial bank money.

Key consideration (KC) 1: An FMI should conduct its money settlements in central bank money, where practical and available, to avoid credit and liquidity risks.

Euroclear Bank does not conduct its money settlements in central bank money.

Euroclear Bank is a central securities depository established under the laws of Belgium that operates a securities settlement system (governed by Belgian law) and that is also authorised as a credit institution (limited purpose banking license). Euroclear Bank indeed acts as settlement bank of the securities settlement system it operates. Therefore, money settlement in all eligible settlement currencies is carried out in the books of Euroclear Bank itself in commercial bank money.

Settlement through accounts opened with the National Bank of Belgium (euro) would not have been practical and available for the following reasons:

- Euroclear Bank offers new issues distribution and settlement in over 46 different currencies to an international Participant base. This makes settlement in central bank money not a practical option as all Euroclear Bank Participants have cash accounts in all of the available settlement currencies where they perform settlement activity in the books of Euroclear Bank (where settlement of the cash leg is effected by crediting and debiting the available Participants' cash accounts in the available currency)
- central bank money settlement in euro could only be offered to those clients having a cash account with the National Bank of Belgium. However, a limited number of Euroclear Bank Participants have access to central bank money euro liquidity or credit through the National Bank of Belgium. Moreover, central bank money settlement would only be an option if both parties to the transaction have access to NBB. This limits further the practical use of such service
- access to the central bank for Participants is primarily required for monetary policy operations, where securities are pre-deposited on a free of payment basis with the relevant central bank and liquidity made available in the central bank's system TARGET2. This means that, for the Participants needing those, monetary policy operations can be handled without using a delivery versus payment mechanism central bank money in the securities settlement system

Notwithstanding the above, Euroclear Bank has signed the T2S framework agreement at the end of 2021 to become a T2S CSD. The aim in the future is to offer the option to its Participants, where practical and available to them, to settle in Euro central bank money settlement via T2S through cash accounts at any Euro central bank connected to T2S.

For the links it maintains with other central securities depositories, Euroclear Bank operates using central banks and/or cash correspondents.

For the main currencies, Euroclear Bank has more than one cash correspondent in place for risk/contingency purposes.

For settlement in most domestic CSDs on T2S (in Austria, Belgium, France, Germany, Luxemburg, the Netherlands, Spain, Italy and Denmark), Euroclear Bank uses its central bank account at National Bank of Belgium or at Danmarks Nationalbank. Additionally, for settlement in Euroclear UK & International, Euroclear Bank uses its account at the Bank of England.

Euroclear Bank is undertaking discussions with a number of central banks to enable it to make and receive money transfers in central bank money.

Key consideration (KC) 2: If central bank money is not used, an FMI should conduct its money settlements using a settlement asset with little or no credit or liquidity risk.

As settlement takes place in the books of Euroclear Bank, the settlement asset used is a claim on Euroclear Bank itself, an AA+ rated bank. Euroclear Bank is subject to CSDR and its banking license is a limited purpose banking license.

Credit and liquidity risks stemming from the use of cash correspondents and depositories are covered under Principles 4 (Credit Risk) and 7 (Liquidity Risk). Details on how Euroclear Bank manages collateral to mitigate credit risk can be found in Principle 5 (Collateral).

Key consideration (KC) 3: If an FMI settles in commercial bank money, it should monitor, manage, and limit its credit and liquidity risks arising from the commercial settlement banks. In particular, an FMI should establish and monitor adherence to strict criteria for its settlement banks that take account of, among other things, their regulation and supervision, creditworthiness, capitalisation, access to liquidity, and operational reliability. An FMI should also monitor and manage the concentration of credit and liquidity exposures to its commercial settlement banks.

This key consideration is not applicable, as no settlement banks are used in Euroclear Bank to support money settlements for Participants in the Euroclear System. All Participants have a cash account directly with Euroclear Bank. Aspects related to FMI links are covered under Principle 20.

Key consideration (KC) 4: If an FMI conducts money settlements on its own books, it should minimise and strictly control its credit and liquidity risks.

Euroclear Bank has a limited purpose banking license that allows it only to offer banking services and credit facilities that are ancillary to its core services as central securities depository under Belgian law and under CSDR. All Euroclear Bank Participants have cash accounts in the available settlement currencies in the books of Euroclear Bank. Money settlements are conducted by debiting or crediting the cash accounts of the Participants that are counterparties in a securities transaction or for the sake of making payments related to corporate actions affecting the securities held in the Euroclear System.

Euroclear Bank has established an enterprise risk management framework which provides for a robust and consistent approach to risk management across the organisation and covers all key sources of risk including credit and liquidity risks.

For more details on Euroclear's risk management, please refer to Principle 3 (Risk Management Framework). Euroclear Bank's liquidity risk management is explained in Principle 7 including aspects of liquidity management per currencies, while credit risk is covered under Principle 4 (Credit Risk). Details on how Euroclear Bank manages collateral to mitigate credit risk can be found in Principle 5 (Collateral).

Key consideration (KC) 5: An FMI's legal agreements with any settlement banks should state clearly when transfers on the books of individual settlement banks are expected to occur, that transfers are to be final when effected, and that funds received should be transferable as soon as possible, at a minimum by the end of the day and ideally intraday, in order to enable the FMI and its participants to manage credit and liquidity risks.

This Key consideration is not applicable, as Euroclear Bank is acting as settlement bank of the Securities Settlement System it operates. All Participants have a cash account directly with Euroclear Bank.

Principle 10: Physical deliveries

An FMI should clearly state its obligations with respect to the delivery of physical instruments or commodities and should identify, monitor, and manage the risks associated with such physical deliveries.

Key consideration (KC) 1: An FMI's rules should clearly state its obligations with respect to the delivery of physical instruments or commodities.

Euroclear Bank does not offer settlement services relating to commodities.

Euroclear Bank securities settlement services are based on immobilisation or dematerialisation of securities. Please refer to Principle 1 – Legal basis for more details.

Euroclear Bank holds physical securities through its network of depositories in immobilised form. The *Operating Procedures of the Euroclear System* clearly state the specific rules in relation to the receipt and delivery of physical instruments. These procedures are available on my.euroclear.com. Additional information is available on my.euroclear.com (search term 'Physical settlement').

The relevant delivery addresses for physical settlement on local markets are provided in my.euroclear.com > My Apps > Market directory.

The number of physical securities considered here is particularly marginal (representing well below 1% of settlement).

Key consideration (KC) 2: An FMI should identify, monitor, and manage the risks and costs associated with the storage and delivery of physical instruments or commodities.

As stated above, Euroclear Bank is not involved in the settlement of commodities.

Euroclear Bank identifies the physical form of securities and adapts its processes for their receipt and delivery accordingly (see KC 1 above). When securities are held in physical form, Euroclear Bank's due diligence procedures foresee:

- a yearly vault inspection that includes a physical verification of securities in the vault or
- self-assessments from international depositories/agents

Euroclear Bank's insurance policies include coverage for losses of physical securities. For physical securities, Euroclear Bank appoints depositories to safekeep the securities in their vaults, and to service them on behalf of Euroclear Bank and its Participants. Contractually, Euroclear Bank requires those depositories to protect physical securities and use vaults whose design and location ensure high level of protection against a series of disasters (floods, earthquakes, fire, and other disasters).

Such depositories are being regularly monitored as defined in the *Network Management Policy Handbook*. For instance, Euroclear Bank performs annual vaults inspections on entities maintaining immobilised physical securities on its behalf. The vault inspection ensures that agreed standards are effectively in place in terms of protection of securities.

Euroclear Bank requires an annual certification from the depositories detailing the securities which are being held in the vaults in accordance with the depository agreement.

In case of shipment of physical securities (for example in case of a change of depository), strict procedures are being followed to ensure compliance with insurance requirements of both Euroclear Bank and the depository making the shipment.

Principle 11: Central Securities Depositories (CSDs)

A CSD should have appropriate rules and procedures to help ensure the integrity of securities issues and minimise and manage the risks associated with the safekeeping and transfer of securities. A CSD should maintain securities in an immobilised or dematerialised form for their transfer by book entry.

Key consideration (KC) 1: A CSD should have appropriate rules, procedures, and controls, including robust accounting practices, to safeguard the rights of securities issuers and holders, prevent the unauthorised creation or deletion of securities, and conduct periodic and at least daily reconciliation of securities issues it maintains.

For all securities held in the Euroclear System, Euroclear Bank has appropriate rules, procedures and controls to safeguard the rights of the securities issuers and holders and prevent unauthorised creation or deletion of securities. Euroclear Bank complies with the (accounting) principles under CSDR and applies the Belgian and European accounting principles:

- Participants' assets and own assets are completely separated the following accounting principles are used:
  - accounts are of the type of assets and liabilities accounts
  - double-entry accounting according to the debit-credit principle
  - balance between debit and credit at all times
  - daily booking, without delay, of transactions
  - simultaneous booking of the securities and cash leg

The initial setup of the ISIN code in the Euroclear system is managed by separate and stand-alone processes. Securities credit or debit are executed by other processes managed by the transactional teams. There is a clear segregation of access and duties between both processes (setup and transactions) and teams who manage these processes.

Euroclear Bank performs two reconciliations:

- securities movement reconciliation, between the movements recorded at Euroclear Bank and those reported by the depository of a transaction (settlement, corporate action), or by the transfer agent (for funds in nominee registration). Euroclear Bank performs this reconciliation on a daily basis for all the security categories in the Euroclear System, covering all counterparts
- securities balance reconciliation, between the balances recorded at Euroclear Bank and those reported by the depository, or by the transfer agent (for funds in nominee registration). Euroclear Bank performs this reconciliation on a daily basis for all the securities categories in the Euroclear System, covering all counterparts

Where relevant and needed, immediate corrective actions are taken in case Euroclear Bank identifies a mismatch.

The booking of securities positions is only performed upon receipt of securities for further credit to Participant accounts. Removal of these securities positions is performed upon final maturity or in the context of a corporate event (e.g. exchange). Both credit and debit of securities are processed in an automated manner[26] at Euroclear Bank upon Participant instruction and depository confirmation. The four-eyes or key & re-key[27] principles are applied to manual processes. In case of an incorrect booking, internal controls performed by the transactional teams or the reconciliation process will detect the case and appropriate actions will be taken by means of a reversal process[28]. Euroclear Bank reports on a daily basis to Participants, the movements in their accounts, as well as opening and closing balances of the securities they hold. Contractual documentation with Participants reflects their obligation to do daily reconciliation.

Additionally, the accounting practices are part of the contractual framework between Euroclear Bank and its Participants and are incorporated into the *Terms and Conditions governing the use of Euroclear*.

Euroclear's Internal Audit department regularly reviews these procedures and controls. External auditors audit those on a yearly basis. The yearly ISAE (International Standard on Assurance Engagements) 3402 report, which is available to Participants and authorities, includes the results of such external reviews. This report of Euroclear Bank provides assurance on the key operational processes impacting customers. It describes the controls performed end-to-end (in particular new issues, settlement or custody instructions and reconciliation procedures) to ensure there are sufficient securities to satisfy customer rights. The effectiveness of controls is tested by the external auditors.

Key consideration (KC) 2: A CSD should prohibit overdrafts and debit balances in securities accounts.

Euroclear Bank's processing systems are designed to prevent securities overdrafts, debit of balances and securities creation.

The *Terms and Conditions governing use of Euroclear* clearly provide that '*Debit balances or overdrafts in Securities Clearance Accounts are prohibited in the Euroclear System*'.

In practice, the system therefore controls the availability of the cash and securities provisions before executing the instructions. If the cash and/or the securities are not available, the transaction will not be settled. Euroclear Bank only credits securities positions upon receipt of securities for further credit to client accounts.

[26] *For the biggest part, credit and debit movements are processed automatically*
[27] *Another user re-performing the same task*
[28] *Described in Section 3.2 of the Operating Procedures of the Euroclear System*

In Euroclear Bank's external ('cross-border') settlement activity, several intraday controls are in place, aiming at prevention, detection, and mitigation actions in case of a mismatch between the external and internal status of a settlement instruction.

In addition, there is a daily monitoring to detect any exceptional short positions, triggering immediate corrective actions in the relevant operational team. Such exceptions are recorded and managed in accordance with the risk management principles.

Key consideration (KC) 3: A CSD should maintain securities in an immobilised or dematerialised form for their transfer by book entry. Where appropriate, a CSD should provide incentives to immobilise or dematerialise securities.

Euroclear Bank provides book-entry settlement exclusively for securities in an immobilised or dematerialised form. In other words, securities are never delivered physically for settlement to take place on Euroclear Bank's books[29].

Physical securities can either be global notes (representing the total issued amount deposited in the Euroclear System) or physical certificates which can possibly circulate outside of market infrastructures.

In Euroclear Bank, physical securities may only be physically delivered at the moment they enter or exit the Euroclear system, i.e. either at the moment of issuance/redemption (typically for global notes) or as a result of physical deposit/withdrawal by a Participant. A deposit in the Euroclear System implies the immobilisation of physical securities (safekeeping in a vault) while a withdrawal implies a physical delivery of securities[30]. Once securities are in the Euroclear System, transactions involving such securities only take place by book-entry.

To be eligible in Euroclear Bank, physical securities need to be immobilised with a CSD or with a depository:

- for securities issued in a Common Depository structure or securities issued as Eurobonds but not held in Common Depository structure, and for which Euroclear Bank holds a balance, the vast majority is issued under global form, a physical certificate representing the entire issuance (e.g. Classical Global Notes, New Global Notes, etc.) and immobilised in the vaults of the depositories
- for the domestic securities recorded in the Euroclear System (held through the links), the majority are issued in dematerialised form or in the form of a global note. The remaining are issued in a physical form and therefore immobilised

Practically, the volumes of physical deposits and withdrawals are negligible and such services are only offered through a limited number of Euroclear Bank's depositories.

[29] *Please refer to Principle 1.*
[30] *In Belgium, physical deliveries can only take place between professionals and for immobilisation purposes.*

Key consideration (KC) 4: A CSD should protect assets against custody risk through appropriate rules and procedures consistent with its legal framework.

Participants' assets are protected against custody risk through the following:

A. Participants' assets are legally protected (under the Royal Decree N°62) against Euroclear Bank's creditors, including in case of bankruptcy of Euroclear Bank

B. the current legal framework (among others Capital Requirements Regulation[31] (CRR) and CSDR[32]) prohibits Euroclear Bank from using Participants' assets without their consent

C. protection of Participants' assets from loss due to Euroclear Bank itself is achieved through:

   - Euroclear Bank's accounting practices and internal controls: Euroclear's accounting practices and internal controls impacting Participant services are audited on a regular basis by Internal Audit and yearly basis by external Auditor. The result of such external annual audit is disclosed on a yearly basis in the ISAE 3402 report. More detailed description in KC 1 of this Principle. Please refer also to D below
   - segregation of Euroclear Bank Participants securities from Euroclear Bank's proprietary securities: see KC 5 hereafter for more details

D. reconciliations are designed to identify any error in order to avoid erroneous/undue creation or deletion of securities, whichever the cause thereof. Reconciliation and investigation measures are further described in KC 5 of the current Principle. In case:

   - Euroclear Bank is at the source of the incorrect processing, it has appropriate insurance coverage in place
   - an FMI counterpart or link is at the source of the incorrect processing, the counterpart's insurance should come into play. This is being monitored by the Network Management department as part of the annual due diligence exercise (including vault inspections, where relevant), during which Euroclear Bank raises a set of questions on the insurance coverage and requests insurance recertification. Residual damages uncovered by an insurance claims payment will remain the liability of the counterparty

E. Euroclear Bank has procedures to select its counterparts (see Principle 16). Euroclear Bank contractually imposes to its counterparts to maintain insurance coverage with respect to securities held on behalf of Euroclear Bank. Before opening links with other CSDs, Euroclear Bank performs an initial verification of the local legislation to ensure that securities held with such CSDs benefit from a level of asset protection that has comparable effects to the Belgian regime. A review of the local legislation is performed periodically (see Principle 1 and Principle 20).

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[31] Regulation 575/2013 of 26 June 2013 on prudential requirements for credit institutions and investment firms IV.

[32] Regulation 909/2014 of 23 July 2014 on improving securities settlement in the European Unions and on CSD.

Key consideration (KC) 5: A CSD should employ a robust system that ensures segregation between the CSD's own assets and the securities of its clients and segregation among the securities of clients. Where supported by the legal framework, the CSD should also support operationally the segregation of securities belonging to a client's customers on the client's books and facilitate the transfer of customer holdings.

In line with regulatory obligations under CSDR, segregation at Participant's level on Euroclear Bank's books is based on Participants' specific account structure requirements, so Participants can segregate their securities and cash as they require.

Euroclear Bank offers to its Participants the possibility to choose the level of segregation (omnibus accounts or client dedicated accounts) they require in its books. Such client choice will have no impact on the level of asset protection granted to the Participant under Belgian law.

At Euroclear Bank, Participants can structure their accounts according to their needs and those of their underlying customers: i.e. ranging from one omnibus account to separate accounts (single or several securities accounts) per function, business line or underlying customer. Participants must indicate whether accounts contain proprietary or customer's assets.

Euroclear Bank has set up an appropriate structure for the purpose of holding its proprietary securities in the Euroclear System, which ensures adequate legal segregation.

Key consideration (KC) 6: A CSD should identify, measure, monitor, and manage its risks from other activities that it may perform; additional tools may be necessary in order to address these risks.

To support its services of notary and central maintenance and settlement services, Euroclear Bank offers two types of ancillary services (in the meaning of CSDR):

- non-banking type ancillary services related to custody and asset servicing (corporate actions, proxy voting, tax services, collateral management services and other services related to settlement)
- banking type ancillary services (including credit facilities and money transfer)

Before being offered to Participants, every potential new service has to go through an approval process documented in the Euroclear Bank policy framework, during which the impact of this new service on the risk profile of Euroclear Bank is assessed. The risk assessment (performed by the business with the assistance of the Risk Management division) identifies all potential risks and mitigating actions. The full process is described in the *New Initiative, Product & Pricing Policy Handbook*.

The impact on the capital requirements is also analysed.

The Euroclear Bank ROC and, for banking type ancillary services, the Euroclear Bank CALCO, review the risk assessment paper and the contemplated new services, adding conditions or recommendations as relevant, for consideration by the relevant decision-making body.

For more information regarding risks related to the banking type ancillary services offered by Euroclear Bank, please refer to the other Principles in this disclosure and in particular Principles 3 Risk Management Framework, Principle 4 Credit Risk, Principle 5 Collateral Risk and 7 (Liquidity Risk).

The continuous identification, measurement, monitoring and management of Euroclear Bank's risks (including those linked to the related services) occur via Euroclear's Enterprise Risk Management Framework (see Principle 3). Principles 4 and 7 include the description of potential credit and liquidity risks respectively. In case there are financial risks (credit, liquidity and market risks) it requires a separate review by the Euroclear Bank CALCO.

Principle 12: Exchange-of-value settlement systems

If an FMI settles transactions that involve the settlement of two linked obligations (for example, securities or foreign exchange transactions), it should eliminate principal risk by conditioning the final settlement of one obligation upon the final settlement of the other.

Key consideration (KC) 1: An FMI that is an exchange-of-value settlement system should eliminate principal risk by ensuring that the final settlement of one obligation occurs if and only if the final settlement of the linked obligation also occurs, regardless of whether the FMI settles on a gross or net basis and when finality occurs.

Euroclear Bank operates a Securities Settlement System (Euroclear System) and offers settlement as an issuer CSD. The Euroclear System is a designated Securities Settlement System notified to ESMA.

The Euroclear Bank Securities Settlement System is a Delivery vs. Payment (DVP) Model 1: internal and Bridge instructions are settled between Participants on a transaction (gross) basis. The finality of the transfer of securities from the seller to the buyer occurs at the same time as the finality of transfer of funds from the buyer to the seller.

Euroclear Bank maintains links with other CSDs, to facilitate transfer of securities between its Participants and the Participants of the other CSDs. Those links are DVP links. When settlement occurs through links, the settlement does not take place in Euroclear Bank. Rather, the settlement takes place in the local market and is then reflected in Euroclear Bank's books. For external ('cross-border') settlement instructions, local rules apply.

The DVP arrangement in the Euroclear System operated by Euroclear Bank is supported by the relevant legal and contractual framework as well as the technical framework. It ensures that delivery of securities takes place if, and only if, cash is received. Practically, the system controls the availability of the cash and securities provisions before executing the instructions (i.e. so-called 'positioning'). If the cash and/or the securities are not available, the transaction will not be settled (but will be recycled later on in accordance with the system's rules). If the cash and/or the securities are available, the instructions will settle and the cash and securities will be transferred simultaneously.

Settlement over the Bridge with CBL is also organised on a DVP Model 1 basis. Securities transfers over the Bridge with CBL are final based on different rules for the overnight and real-time settlement process as described in the *Operating Procedures of the Euroclear System* which form part of the *Terms and Conditions governing use of Euroclear*, available on my.euroclear.com. Detailed documentation is also provided in the online market guides, available on my.euroclear.com.

Participants can also settle transactions via Free of Payment (FoP) instructions.

Please also refer to Principle 8 on Settlement finality.

Principle 13: Participant-default rules and procedures

An FMI should have effective and clearly defined rules and procedures to manage participant default. These rules and procedures should be designed to ensure that the FMI can take timely action to contain losses and liquidity pressures and continue to meet its obligations.

Key consideration (KC) 1: An FMI should have default rules and procedures that enable the FMI to continue to meet its obligations in the event of a client default and that address the replenishment of resources following a default.

Euroclear Bank's contractual documentation covers both Participants' operational default and financial default as meant by CPMI-IOSCO. Additionally, its various internal financial risk policies and procedures comply with the requirements with regards to defaults as set in the European Capital Requirements Regulation (CRR).

Operational default

Participants in the Euroclear System are subject to admission criteria, one of which is regarding the operational and technological capability aiming to ensure business continuity (see Section 2.1.2(e) of the *Operating Procedures of the Euroclear System*). Operational capability is monitored via the Commercial recertification process. Non-compliance with the admission criteria can result in suspension or termination of access.

Access rules and procedures (to the extent relevant to Participants) are documented in the *Terms and Conditions governing use of Euroclear*, which encompass the *Operating Procedures of the Euroclear System*.

For more details on Access, please refer to Principle 18.

Financial default

Euroclear Bank, as operator of the Euroclear System, has effective and clearly defined rules and procedures to manage the financial default of one or more of its Participants. The default rules and procedures are embedded in the *Terms and Conditions governing use of Euroclear* and the *Operating Procedures of the Euroclear System*, which differentiate two types of default (see section 3.8 of the OPs):

- the inability to fulfil the obligations imposed to Participants under Euroclear Bank's contractual documentation, i.e. a contractual default, which includes inter alia the obligation to have adequate financial resources (see section 2.1.2(e) of the *Operating Procedures of the Euroclear System*) and to pay Euroclear Bank's fees (see section 13 of the *Terms and Conditions governing use of Euroclear*)

- insolvency proceedings, defined in accordance with the Settlement Finality Directive (SFD) 98/26/EC, implemented by the Belgian Settlement Finality Law of 28 April 1999 (SFA)

Euroclear Bank also acts as settlement agent for Participants in the Euroclear System and provides banking-type ancillary services in this capacity. The rights and obligations of Euroclear Bank as settlement agent granting credit to Participants are documented in the *Terms and Conditions governing use of Euroclear* as well as in separate agreements between Euroclear Bank and the Participant (the *Collateral Agreement Governing Secured Borrowings by Participants in the Euroclear System* and the *General Conditions Governing Extensions of Credit to Participants in the Euroclear System*). The actual actions taken by Euroclear Bank, as settlement agent, when managing the consequences of a Participant's default are determined on a case- by- case basis, depending on the situation.

Euroclear Bank's detailed contractual framework (the rules):

- reflects the principles and requirements provided in the Settlement Finality Act (SFA) in relation to insolvency proceedings and sets out principles for the other types of default in the meaning of this Principle
- sets out the actions Euroclear Bank must take as operator of the Euroclear System (*Terms and Conditions governing use of Euroclear* and *Operating Procedures of the Euroclear System*) and may take as settlement agent upon occurrence of default events (*Terms and Conditions governing use of Euroclear*, *Operating Procedures of the Euroclear System* and the relevant additional credit and collateral documentation)
- sets out the rights and responsibilities of defaulted Participants

Euroclear Bank further implements the rules with internal procedures. The objective of default management procedures is to:

- ensure compliance with the SFA principles with regard to the refusal of incoming instructions and processing of pending instructions (for both proprietary and customer transactions, which are treated the same way. Euroclear Bank only has a contractual relationship with its direct Participant. For more details, please refer to Principle 19) and thereby limit disruptions to the functioning of the Euroclear System
- avoid or minimise losses for Euroclear Bank resulting from the outstanding exposures of a defaulted Participant, by appropriation of pledged securities, monetisation and liquidation of defaulted Participant's collateral (replenishment of resources) in a prudent and orderly manner

For more details on settlement finality, please refer to Principle 8.

For more details on credit risk, collateral and liquidity risk, please refer to Principles 4, 5 and 7.

Identification of default

Euroclear Bank has in place an active monitoring to identify a Participant's default and take remedial actions as contractually available, or as mandated by the SFA where applicable. The objective is to capture any deterioration in creditworthiness of the Participant, well ahead of its potential default and proactively reduce exposures. Mitigating actions target to minimise any credit risk and consequently any liquidity risk. These actions will vary according to the severity of the crisis and can include amongst others a reduction in the available facilities, an increase in haircuts, a strengthening of the required collateral profile., etc.

Euroclear Bank collects information allowing to identify potential crisis (either idiosyncratic or market-wide) or default, takes mitigating measures and, where legal or contractual conditions are met, will put the Participant in default. The collected information includes:

- market signals, external and/or internal rating changes, press reports and other market information
- direct notification by other relevant channels (e.g. regulators)
- notification by the Participant itself (as required by the *Terms and Conditions governing use of Euroclear*)

Management of default

Once a Participant default (financial or operational) is identified and confirmed, the Crisis Management Process is activated to coordinate the default management responses, including the prevention of incoming instructions where applicable and the monetisation and/or liquidation of the Participant's assets, where relevant.

The roles and responsibilities of internal departments involved in the default management are described in the *Financial Risk Policy Handbook, the Euroclear Bank Insolvency Policy, and the Euroclear Bank Playbook - Default or Insolvency of Client or Business Partner of Euroclear Bank*, which are regularly reviewed and updated. They also highlight the interaction of the internal stakeholders with external stakeholders such as the defaulting Participant's administrator or curator or the liquidation agents and counterparties, which would be used for the execution of defaulting Participant's assets or to generate liquidity.

The default management procedures include a close cooperation and communication with the appointed insolvency administrator/liquidator/curator to support a smooth liquidation of the assets held by the defaulting Participant in the Euroclear System. The regulator will also be informed of the situation.

The process is regularly reviewed, tested and amended, where necessary.

Use of financial resources

Euroclear Bank acts both as operator and as settlement agent of the Euroclear System for DVP (delivery versus payment) transactions. As settlement agent of the Euroclear System, Euroclear Bank extends credit to its Participants. All credit facilities are fully secured with collateral [33]. In the event of default, and as documented in the Rules, collateral posted by the defaulting Participant would be monetised (via appropriation of pledged securities) and/or liquidated to meet any existing/arising obligations which cannot be covered by Euroclear Bank's right of set off under the *Terms and Conditions governing use of Euroclear* (Section 16(a)). For more details, please refer to Principles 4 and 5.

Please refer to Principle 7 – Liquidity risk for more details on how Euroclear Bank manages liquidity risks stemming from default of one or more of its Participants, including the Contingency Funding Plan which describes the order in which the financial resources can be used for the replenishment of resources.

For more details on the measures Euroclear Bank could take in the context of a financial default affecting CBL, please refer to Principle 20 – FMI links.

Euroclear Bank has also established a Recovery, Restructuring and Orderly Wind-down (RRW) plan in accordance with applicable requirements stemming from the banking legislation and CSDR. Such RRW plan elaborates on stress scenarios with related recovery options (including capital increase, intragroup funding, etc).

Key consideration (KC) 2: An FMI should be well prepared to implement its default rules and procedures, including any appropriate discretionary procedures provided for in its rules.

For operational[34] and financial defaults, the *Terms and Conditions governing use of Euroclear* and the *Operating Procedures of the Euroclear System* detail the conditions applicable to such defaults, their consequences and the options available to Euroclear Bank (including the procedural aspects like notifications to the concerned Participant). Internal guiding principles are documented in the *Financial Risk Policy Handbook*.

As operator of the Euroclear System, Euroclear Bank has documented in its *Terms and Conditions governing use of Euroclear* and *Operating Procedures of the Euroclear System* the rules it applies in the context of insolvency proceedings affecting a Participant for processing of pending instructions (entry, irrevocability and finality of instructions).

[33] *Unsecured credit facilities are only provided when allowed under CSDR i.e. to exempt entities in accordance with Article 23(2) of Regulation (EU) 390/2017, and central banks, multilateral development banks and international organisations (other than exempt entities) of which the exposures are covered by Euroclear Bank's eligible capital after deduction of the regulatory CSDR capital requirement.*

[34] *An operational default or "operational past due" occurs when a Participant (borrowing or other) or other counterpart is temporarily not able to meet in a timely manner any of its obligations towards Euroclear bank due to an operational problem on the Participant (borrowing or other) or other counterpart's side, such as a failure in information technology systems (definition from Financial Risk Policy Handbook).*

In respect of a Participant's insolvency situation, Euroclear Bank always applies a set of standard actions:

- preventing the entry into the system of new instructions
- blocking the Accounts, cash and securities positions
- handling pending instructions
- informing the receiver/administrator/trustee/curator, if any

The process may however be complemented by other actions depending on the type of services the defaulted Participant uses and whether it has a credit facility.

For credit facilities granted by Euroclear Bank as settlement agent of the Euroclear System, the consequences of insolvency proceedings and of a contractual default are documented in the *Collateral Agreement Governing Secured Borrowings by Participants in the Euroclear System* and the *General Conditions Governing Extensions of Credit to Participants in the Euroclear System*.

As part of its risk management framework, Euroclear Bank has established a global business continuity management strategy and procedural framework to ensure adequate awareness and readiness for Euroclear Bank's crisis management response in a series of incidents, including the default of a Participant. To meet the Euroclear Business Continuity Management objectives defined by the Board, the Group Business Resilience division ensures the coordination and readiness of the relevant internal stakeholders (e.g., by defining the sequencing of actions in the context of an operational/financial crisis). For more details on the risk management framework, please refer to Principle 3.

The *Euroclear Bank Insolvency Policy* details the specific steps to be taken by Euroclear Bank in compliance with applicable legislation and contractual arrangements to manage the consequences of insolvency proceedings affecting a Participant of the Euroclear System.

Euroclear Bank maintains internal procedures and processes to manage financial defaults that do not originate from insolvency proceedings.

The *Euroclear Bank Playbook - Default or Insolvency of Client or Business Partner of Euroclear Bank* and *Euroclear Bank Insolvency Policy* define the communication path of a Participant default to all relevant internal and external stakeholders, including the authorities.

The *Banking Implementing Procedures (Default - Credit Crisis Management and Liquidity Crisis Management)* provide details of the respective end-to-end processes, according to the guiding principles of the *Financial Risk Policy Handbook*.

All default management processes and procedures are reviewed and tested at least annually to ensure their adequacy and effectiveness.

Key consideration (KC) 3: An FMI should publicly disclose key aspects of its default rules and procedures.

The *Terms and Conditions governing use of Euroclear* and the *Operating Procedures of the Euroclear System* are publicly available on my.euroclear.com and detail all aspects that are relevant for Participants in case of default when Euroclear Bank acts as the operator of the Euroclear System:

- the *Operating Procedures of the Euroclear System* set out the admission criteria to become a Participant in the Euroclear System that the Participants must meet on an ongoing basis
- the *Terms and Conditions governing use of Euroclear* list the events that may trigger the suspension or termination of the participation of a Participant in the Euroclear System
- the *Operating Procedures of the Euroclear System* clarify the rules governing entry and irrevocability of instructions as well as finality of transactions (for both proprietary and customer transactions, which are treated the same way). Euroclear Bank only has a contractual relationship with the Participant. For more details, please refer to Principle 19
- the *Operating Procedures of the Euroclear System* clarify the rules applicable to defaulted Participants

Credit facilities granted to Participants by Euroclear Bank, acting as a settlement agent, are governed by a specific bilateral contractual documentation which is disclosed to Participants benefiting from such facilities and which cross-refers on some aspects to the *Terms and Conditions governing use of Euroclear* and the *Operating Procedures of the Euroclear System*. This bilateral contractual documentation details the relevant aspects for Participants in case of default:

- pursuant to the *General Conditions Governing Extensions of Credit to Participants in the Euroclear System*, each (cash) overdraft is payable immediately upon demand by Euroclear Bank
- the *Collateral agreement governing Secured Borrowings by Participants in the Euroclear System* (i) defines the 'Events of Default' under the provisions of the credit arrangements entered into between Euroclear Bank and a Participant benefiting from a credit facility granted by Euroclear Bank and (ii) sets out the remedies available to Euroclear Bank in case such 'Events of Default' occurs, which includes Euroclear Bank's right to appropriate the collateral provided by the Participant to secure its borrowings
- the *Supplementary conditions governing extensions of credit to borrowers of securities through the Euroclear System* (including GC Access service) defines additional 'Events of Default' applicable to borrowings of securities by a Participant under the securities lending and borrowing services of Euroclear Bank

Prior to the declaration of an 'Event of Default', Euroclear Bank will send a 'payment notice' to the Participant in writing. If no payment is received within a reasonable timeframe, Euroclear Bank will declare the default of the relevant Participant by sending a default notice.

Euroclear Bank can then enforce the collateral agreement and trigger the Appropriation of Pledged Securities to either:

- liquidate the securities to realise cash to discharge the Participants indebtedness or
- bridge the temporary liquidity gap pending the collateral liquidation of a Participant in default

Actions taken by Euroclear Bank following insolvency proceedings affecting a Participant

The *Operating Procedures of the Euroclear System* describe the actions taken by Euroclear Bank upon the opening of an insolvency proceedings against a Participant. Euroclear Bank will always take four key actions:

1. cutting off the insolvent Participant's communication means (i.e. preventing the entry into the system of new instructions)
2. temporarily blocking the account(s) of the insolvent Participant (mainly to prevent system generated instructions from settling when generated post-bankruptcy and facilitate the implementation of other actions)
3. handling pending instructions already entered into the system at the time of the opening of the insolvency proceedings following the finality rules documented in the *Terms and Conditions governing use of Euroclear* as per the provisions of the SFA
4. contacting the administrator/liquidator of the defaulted Participant

Other Participants

No specific mechanisms need to be disclosed as Euroclear Bank's actions will be limited to the exchange of information on the defaulted Participant to the extent the default affects or may affect other Participants in the Euroclear System.

Key consideration (KC) 4: An FMI should involve its clients and other stakeholders in the testing and review of the FMI's default procedures, including any close-out procedures. Such testing and review should be conducted at least annually or following material changes to the rules and procedures to ensure that they are practical and effective.

The Business Continuity procedures are regularly tested with the involvement of all relevant internal stakeholders.

For insolvency management, the internal policy framework of Euroclear Bank also foresees such testing with a relevant sample of external stakeholders including Participants, market infrastructures (such as CCPs and other CSDs), relevant trading venues, if any, and any other entities, as appropriate (such as central banks and Euroclear Bank in its capacity as settlement agent).

Additionally, the test assessment report is shared with the NBB, as competent authority, and the relevant authorities of Euroclear Bank. A summary of the results is also disclosed to Participants via the User Committee.

Principle 15: General business risk

An FMI should identify, monitor, and manage its general business risk and hold sufficient liquid net assets funded by equity to cover potential general business losses so that it can continue operations and services as a going concern if those losses materialise. Further, liquid net assets should at all times be sufficient to ensure a recovery or orderly wind-down of critical operations and services.

Key consideration 1: An FMI should have robust management and control systems to identify, monitor, and manage general business risks, including losses from poor execution of business strategy, negative cash flows, or unexpected and excessively large operating expenses.

Definition

Euroclear Bank defines Business Risk as the risk that the company is not achieving its aimed, predicted financial results or risk to its solvency or ability to meet capital requirements, for instance due to unexpected decrease in profitability, improper business decisions, lack of responsiveness towards changes impacting our business objectives, inadequate management of its product/client portfolio.

Euroclear Bank also defines Strategic Risk as a risk arising from strategic decisions and supporting business model, and risks that the company does not achieve its aimed and predicted financial results.

Risk Identification, measurement, monitoring and management

The responsibility to establish and operate an effective risk management system of business risk is with the Euroclear Bank Board and Management. Principle 3 (Framework for the comprehensive management of risks) elaborates on Euroclear Bank's Enterprise Risk Management Framework and on how it helps management to identify, measure, monitor and manage risks.

Multi-year strategic objectives are set by the Board in dialogue with Senior Management. The Board also defines a robust Risk Appetite framework and risk appetite limits to support the achievement of those strategic objectives. The Board of Directors also sets Euroclear Bank's annual business objectives (referred to as the 'CEO and Management Committee Objectives') derived from the multi-year strategic objectives. The CEO and the Management Committee, as a collegiate body, ensure that the objectives are met and that the performance is reviewed regularly during the year and at on a semi-annual basis by the Board (See also Principle 2 - Governance KC 1).

Objectives are translated into business plans (including capital planning and funding strategies), which are regularly updated.

The First line (in their area of business) uses the Enterprise Risk Management Framework to identify, assess, monitor and manage risks that might impact the achievement of Euroclear Bank's key objectives:

- the Group Strategy and Product Expansion division, among others, are required to identify, assess, monitor, manage and report on the risks resulting from poor execution of the strategy. The identification and assessment process are supported by strategic workshops at Senior Management level and interactions with the Board
- the Finance division coordinates a yearly forecast exercise, on revenues and costs, receiving input from all key internal stakeholders and taking into account external market evolution and potential risks. Market intelligence, regulatory changes and external sources of market statistics are used to evaluate internal revenue projections (i.e. a combination of qualitative and quantitative elements are taken into consideration in the forecasting exercise, market benchmarks are considered together with qualitative elements like policy changes on the market, etc.)
- client needs are captured, evaluated, reviewed, notably via User Groups or relationship via the Commercial division. The Commercial division holds regular meetings at senior level with the users to make sure Euroclear Bank products and services continue to fit their business needs, in line with the *New Product and Significant Changes Board Policy* [35]
- Euroclear Bank's Risk Champions in the First Line promote, among others, the early identification and monitoring of new risks or the evolution of existing risks

Euroclear Bank has a number of means to facilitate the identification, assessment and monitoring of Strategic & Business risks. Key among them is the positive assurance report (PAR) which facilitate identification of key Strategic & Business risks (amongst others) that might undermine the achievement of business objectives, along with identification and assessment of relevant key controls. Further information on the PAR process is in Principle 3 (Framework for the comprehensive management of risks), Principle 17 (Operational Risk) and Principle 21 (Efficiency & Effectiveness).

Business Risk management

At group level, transversal business lines Management Teams, acting as advisory bodies, are established to ensure focus and ownership of the business plans for each of the business lines, including their strategy, (new) product developments, sales, service delivery, and bottom-line profit and loss (P&L). Although they are not formal governance bodies as such, they facilitate the cross-divisional and entities coordination to ensure consistency and alignment with the overall group strategy.

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[35] *The* New Product and Significant Changes Board Policy *provides the key principles specific to the identification, monitoring and management of risks associated with the introduction of new products/services, significant changes and exceptional transactions. It covers as well as the monitoring of risks of existing product/services. This policy is a revision of the previous New Initiative, Product & Pricing (NIPP) Policy. A Policy Handbook lays down how those principles are applied, as set by the Euroclear Bank Management Committee.*

Monitoring of the overall business plan is done by the Financial Division and the P&L is actively followed-up by the Euroclear Bank Management Committee. The financial results are compared to the financial plan on a monthly basis.

Business risk assessment is an integral part of the capital and liquidity assessment process performed yearly by Risk Management via the Internal Capital and Liquidity Adequacy Assessment (ICLAAP), which ensures that adequate capital and liquidity is provided to support our business plan execution. The ICLAAP objective is to assess and maintain on an ongoing basis the amounts, types and distribution of internal capital that Euroclear considers adequate to cover, in a current and forward-looking mode, the nature and level of the risks to which Euroclear Bank is or might be exposed.

Additionally, the Finance division performs a capital and cash flow projection and planning (Capital Planning) for the next five years. In this exercise, the evolution of the capital requirements over a five-year horizon is compared with the evolution of the capital supply (based on financial multi-year plan) over the same period under both baseline and stressed conditions.

For the revenue side, the Commercial division monitors business at risk and opportunities for new business on a monthly basis and Group Strategy and Product Expansion division drives the quarterly review of Market Outlook and quarterly assessment of business risks and threats over a five-year horizon.

The Finance division monitors the cost side (yearly performance review of suppliers and monthly reviews on implementation sourcing strategies and savings).

The key controls around revenues/costs are described in the Financial Internal Control Accountability (FICA) control framework[36].

The Euroclear Bank Management Committee and Board (and its Risk Committee) monitors and regularly discusses Euroclear Bank's financial performance and capital adequacy. Additionally, Euroclear Bank MC monitors quarterly a series of prudential ratios and on a selected number of them quarterly reports to the Euroclear Bank Board.

The Risk Management division is responsible for facilitating and challenging the first line on the identification, assessment, monitoring and management of Strategic & Business risks. It does this through a combination of continuous risk monitoring and analysis combined with a rolling programme of independent risk assessments. Key Risk Management concerns are highlighted to the Euroclear Bank Management Committee and the Board Risk Committee through the quarterly Corporate Risk Report. Dedicated underpinning dashboards have been implemented for business risk.

Furthermore, the Internal Control System (ICS) report is prepared yearly to report to the Board on the effectiveness of the Euroclear Bank internal control system including controls effectiveness of the strategic and business risks.[37]

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[36] *FICA is a process aimed at evidencing execution of the control activity*

[37] *See also Principle 17, KC 1*

Key consideration (KC) 2: An FMI should hold liquid net assets funded by equity (such as common stock, disclosed reserves, or other retained earnings) so that it can continue operations and services as a going concern if it incurs general business losses. The amount of liquid net assets funded by equity an FMI should hold should be determined by its general business risk profile and the length of time required to achieve a recovery or orderly wind-down, as appropriate, of its critical operations and services if such action is taken.

Euroclear Bank holds high quality assets to cover its general business risk, as described under KC 4. The business and strategic risk capital charge is equal to the larger of the following two approaches:

1. a statistical approach, which models the uncertainty of the pre-tax operating profit by forecasting safekeeping income, settlement income and net interest income

2. a scenario-based approach, which captures the business and strategic risk and result in a potential decrease in net profit, developed as part of the group-wide capital planning exercise

A CSDR-related minimum requirement, corresponding to three months of operating expenses[38] is used to floor the business risk capital charge.

Euroclear Bank's RRW plan models the impact of various extreme but plausible hypothetical scenarios that span the range of risks to which Euroclear Bank is exposed. Each scenario is calibrated to ensure that it is sufficiently severe to threaten the financial viability of Euroclear Bank as a going concern if extreme measures are not taken. To demonstrate that Euroclear Bank has sufficient recovery capacity, a potential mix of recovery and/or restructuring options documented in the RRW plan are 'overlayed' to demonstrate an example of how Euroclear Bank may use its recovery capacity to recover from the crystallised losses. In performing this exercise, the time taken to restore financial viability is also demonstrated.

Further information on Euroclear Bank's RRW plan can be found in Principle 3, KC 4.

Key consideration (KC) 3: An FMI should maintain a viable recovery or orderly wind-down plan and should hold sufficient liquid net assets funded by equity to implement this plan. At a minimum, an FMI should hold liquid net assets funded by equity equal to at least six months of current operating expenses. These assets are in addition to resources held to cover client defaults or other risks covered under the financial resources principles. However, equity held under international risk-based capital standards can be included where relevant and appropriate to avoid duplicate capital requirements

[38] *Article 6 of Regulation (EU) 390/2017.*

Recovery and orderly wind-down plan

Euroclear Bank's RRW plan documents the process for the transfer of assets which would be conducted by Euroclear Bank to perform an orderly wind-down. An orderly wind-down is one whereby the ceasing of the critical functions of Euroclear Bank does not cause a sudden disruption to the wider financial markets.

Euroclear Bank has assessed that the timeframe required to execute an orderly wind-down would be no more than six months. In accordance with CSDR, to ensure the successful implementation of the orderly wind-down, Euroclear Bank holds sufficient liquid net assets funded by equity to cover six months of operating expenses.

The six months of current operating expenses are added on top of the Pillar 2 requirements[39] to ensure that the capital assigned to fund an orderly wind-down is clearly separated from capital to cover other risks contemplated in sizing the Pillar 2 requirements.

Euroclear Bank's wind-down plan is updated annually and reviewed and approved by appropriate governance body.

Key consideration (KC) 4: Assets held to cover general business risk should be of high quality and sufficiently liquid in order to allow the FMI to meet its current and projected operating expenses under a range of scenarios, including in adverse market conditions.

Euroclear Bank's capital is invested in EUR-denominated sovereign, supranational, agency and other sub-sovereign or state guaranteed debt instruments, which are freely transferable and without any regulatory constraint or third-party claims that could impair Euroclear Bank's ability to access them on the same business day when a decision to liquidate such financial instruments is taken. The issue or issuer are rated AA- or higher by at least two out of the three rating agencies (Moody's, S&P and Fitch) and confirmed by Euroclear Bank's internal rating. All instruments need to be ECB eligible. Detailed criteria for the investment of own funds are described in Principle 16 – Custody and investment risk.

Financial instruments shall allow to obtain liquidity via an outright sale, by pledging the securities to the NBB or, alternatively, to use them in the repo market. Pledging the securities to the NBB and/or use them in the repo market ensures Euroclear Bank same-day monetisation.

The quality and liquidity of the assets are assessed monthly by Euroclear Bank.

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[39] *As a credit institution, Euroclear Bank complies with the requirements formulated in the transposition of the Basel Accord into European regulation – the European Capital Requirements Regulation and the European Capital Requirements Directive*

Key consideration (KC) 5: An FMI should maintain a viable plan for raising additional equity should its equity fall close to or below the amount needed. This plan should be approved by the board of directors and updated regularly.

The Euroclear Bank Management Committee and Euroclear Bank Board closely monitor Euroclear Bank's capital adequacy on an on-going basis. A dedicated Risk Appetite Framework (RAF) and Recovery, Restructuring and Wind-down (RRW) Dashboard are in place to ensure that any developing stresses are captured in a timely manner. Both the RAF and RRW Dashboard contain forward looking core financial indicators.

Should one or more of these core financial indicators be outside of the Board's appetite for the associated risk, then Euroclear Bank has a Board approved RRW plan. This plan complements Euroclear Bank's Contingency Funding Plan and provides a number of extreme internal and external measures (e.g., a capital injection from the Euroclear group, an external issuance of additional capital or the disposal and/or restructuring of assets) that could be implemented should Euroclear Bank be facing a severe financial stress, and thus need to replenish its capital and/or liquidity.

The Euroclear Bank RRW plan is updated annually as a minimum and submitted to the Euroclear Bank Board for approval prior to onward submission to the NBB and other relevant regulators.

Principle 16: Custody and Investment risks

An FMI should safeguard its own and its clients' assets and minimise the risk of loss on and delay in access to these assets. An FMI's investments should be in instruments with minimal credit, market, and liquidity risks.

Key consideration (KC) 1: An FMI should hold its own and its clients' assets at supervised and regulated entities that have robust accounting practices, safekeeping procedures, and internal controls that fully protect these assets.

Euroclear Bank recognises custody risk as a key source of risk under the operational risk category (see Principle 3 for a description of the Enterprise Risk Management Framework) and as such, integrated in the Euroclear Risk Library.

Euroclear Bank defines custody risk as the risk of loss on securities held in custody in the event of a custodian's (or sub-custodian's) insolvency, negligence, fraud, poor administration, or inadequate recordkeeping. Custody risk relates to both the risk of a loss of own and Participants' assets held through various counterparts[40].

For securities held by the Participant with Euroclear Bank, Euroclear Bank is either acting as issuer CSD (where securities are primarily issued with it) or as investor CSD (where Euroclear Bank holds the securities with another CSD, directly or indirectly). Euroclear Bank maintains both direct and indirect links with CSDs inside and outside of the European Union. When Euroclear Bank holds securities with another counterpart, it performs a verification of the local legislation to ensure that securities held with such counterpart are eligible in the Euroclear System for settlement by book-entry movements and benefit from a level of asset protection that has comparable effects to the Belgian regime (e.g. the securities held by Euroclear Bank cannot be claimed by the creditors of the counterpart, even in the context of insolvency of such counterpart). A review of the relevant aspects of local legislation is performed periodically. For more details, please refer to Principle 1 – Legal basis.

For securities the Participant holds in FundSettle[41], securities can be held through Euroclear Bank. Euroclear Bank holds the fund's shares or units in the books of the issuer (register generally held by a transfer agent) or the CSD (for funds distributed via a CSD) and the Participant benefits from the asset protection regime offered under Belgian law. Alternatively, securities can be held by the Participant directly in the books of the issuer (register generally held by a transfer agent) and Euroclear Bank only reflects the position of the Participant via a non-deposit account.

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[40] *While the Terms and Conditions governing use of Euroclear refer to the generic concept of « depository », when referring to issuer CSD activity or investor CSD activity, Euroclear Bank uses a series of concepts which are regrouped here under the generic name of « counterparts ».*

[41] *FundSettle is the dedicated fund service of Euroclear which supports both the buy and sell sides of fund distribution, providing automated order routing, settlement and asset servicing.*

Investments of own and clients' cash are done along high standards of financial soundness, to mitigate respectively the associated credit, liquidity and market risks. Euroclear Bank recognises investment risk across the Liquidity, Credit and Market Risk categories. Please see KC 3 and 4 below for more details.

Procedural framework

Euroclear Bank has a framework for the set up and the maintenance of Euroclear Bank's network of counterparts for the issuer CSD activity, the investor CSD activity and their respective market environment. The principles of the set up and monitoring of the links, its counterparts and the market they operate in are described in the *Network Management Policy Handbook*, which is updated and reviewed when applicable and is approved on a yearly basis by the Euroclear Bank Management Committee.

Besides verifications on the legal framework, Euroclear Bank performs a risk-based eligibility review on the counterpart before being accepted.

As a prerequisite, Euroclear Bank's Compliance & Ethics (C&E) department is also involved and a counterpart cannot be considered unless C&E has provided positive feedback on the compliance framework of such counterpart in respect of anti-money laundering and anti-terrorist financing regulations.

Once this is obtained, additional criteria are assessed, amongst others:

- creditworthiness
- regulatory status
- accounting practice
- safekeeping procedures
- control environment
- risk management principles

All these criteria are monitored on an ongoing basis to capture and assess any changing parameters and mitigate any new risk identified or existing risk which has deteriorated.

Please refer to Principle 20 – FMI links for further details on the set up and maintenance of CSD links.

Protecting Euroclear Bank's assets and Participants' securities

Asset protection is ensured through different measures.

For issuer and investor CSD activity

Euroclear Bank obtains an external legal opinion on a number of key local practices and regulations. These include asset protection, insolvency proceedings and asset accessibility as the case may be.

Euroclear Bank sets up contractual agreements with the relevant counterpart and ensures asset protection through specific provisions:

- the right to inspect and audit the records at any time
- confirmation of the absence of encumbrance on the assets (absence or waiver of lien except if mandatory under local law)
- understanding on when settlement is final
- clear description of insolvency proceedings under the laws of the counterpart
- segregation of assets
- strong record-keeping processes and accounting practices
- daily reconciliation of balances and movements with the counterpart
- confirmation that adequate insurance coverage is in place

An annual due diligence review process is in place. Euroclear Bank also uses reports from the external auditor of the counterpart (such as ISAE 3402) for its annual assessment.

In case of physical securities, such securities are kept in the vaults of depositories which are selected and monitored for this additional purpose, including through regular vault inspections. For the issuer CSD activity, physical securities are in global or physical individual notes kept through common depositories, specialised international depositories and common safekeepers in immobilised form.

For securities held in FundSettle

Euroclear Bank obtains an external legal opinion on a number of key local practices and regulations. These include, asset protection, insolvency proceedings and asset accessibility.

For funds units held through Euroclear Bank, an annual due diligence review process is in place to get a positive assurance on the Transfer Agent on a number of criteria. Euroclear Bank also uses reports from the external auditor of such entities (such as the ISAE 3402 report) for its assessment.

For funds units held in non-deposit accounts, Euroclear Bank ensures an adequate recording of the positions in the funds register.

Key consideration (KC) 2: An FMI should have prompt access to its assets and the assets provided by clients, when required.

Euroclear Bank has set up an appropriate structure for the purpose of holding its proprietary securities in the Euroclear System, which ensures adequate legal segregation in the books of Euroclear Bank. Euroclear Bank's portfolio of own securities consists of sovereign, supranational or agency debt instruments.

Euroclear Bank is a credit institution. Cash deposited with it is reimbursable upon request (Participants have a claim against Euroclear Bank). For cash, when required Euroclear Bank can instruct (access) transfers on the cash accounts it holds through its network of cash correspondents.

Client deposits in cash can be re-invested on a secured basis through reverse repos or unsecured via outright purchases of high-quality securities, deposits at the central bank or to limited extent deposits with Euroclear Bank cash correspondents or other market counterparts. Forex Swap may be used to convert one currency into EUR, USD or GBP and can then be re-invested on a secured basis via reverse repos or left with the NBB (EUR) or BoE (GBP).

Euroclear Bank ensures daily it has sufficient cash and/ or monetizable assets to support both day-to-day and potential stress scenarios. Euroclear Bank mainly invests long balances in assets that either contractually mature the next day, can be monetised same day through the NBB, BoE, committed repo facilities, uncommitted readily available repo arrangements or liquidated via a liquidation manager.

Participants' securities

Part of Euroclear Bank's requirements for the establishment and maintenance of a link is asset accessibility, meaning that Euroclear Bank gets prompt access to the assets when required (in business as usual and contingency mode/insolvency situation).

In the normal course of business, Euroclear Bank ensures prompt access to securities through relevant account structure for each link allowing access to securities without undue delay and through straight through processing (STP) communication channels allowing Euroclear Bank to settle transactions and get access to the relevant reporting promptly.

In case of Participant insolvency, Euroclear Bank relies on the strict collateral criteria imposed, in combination with central banks access, access to the repo market and committed facilities to ensure quick access to liquidity.

In case of insolvency situations of a counterpart, the external legal opinions collected by Euroclear Bank for each link and for funds held by Euroclear Bank stipulate the proceedings to claim securities from the receiver and avoid undue delays in accessing the securities.

With regards to access to securities and communication channel, for direct operated links, Euroclear Bank has implemented a dual communication channel, allowing Euroclear Bank to communicate/instruct directly to the CSD if needed. These channels are tested on a yearly basis.

Key consideration (KC) 3: An FMI should evaluate and understand its exposures to its custodian banks, taking into account the full scope of its relationships with each.

Euroclear Bank monitors its exposures on stakeholders for all the roles they may have in the system, such as Participant (credit line for settlement activity, securities borrowing), issuer of securities (used as collateral by other Participants, or securities that are being redeemed/pay interest), cash correspondent and treasury counterpart (for re-deposits of cash balances), common depository, CSD and counterpart (for indirect links).

For more information regarding the measurement and monitoring of credit and liquidity exposure please refer to Principle 4 – Credit risk section KC 2 and Principle 7 – Liquidity risk section KC 1.

Securities

Euroclear Bank's strategy is to convert, where possible, indirect links to direct links to minimise the risk on custodian banks. Currently, more than 80% of Euroclear Bank depot is held through direct links with the local CSD. For indirect CSD links, two depositories are appointed per country and securities are split amongst them, if considered appropriate.

Cash

The management of the credit risk on the cash correspondents is based on three pillars:

- a rigorous selection process of cash correspondents
- monitoring of long balances with all cash correspondents
- monitoring on a continuous basis of the exposures on cash correspondents versus risk thresholds (market risk limits, credit limits and large exposures/concentration limit)

Please refer to Principle 4 (Credit Risk) on Risk Management tools to control credit risk (KC 2).
For the majority of currencies, Euroclear Bank has accounts with multiple cash correspondents in order to avoid concentration of credit and liquidity risks.

Key consideration (KC) 4: An FMI's investment strategy should be consistent with its overall risk management strategy and fully disclosed to its clients, and investments should be secured by, or be claims on, high-quality obligors. These investments should allow for quick liquidation with little, if any, adverse price effect.

General investment strategy

Euroclear Bank's investment strategy is in line with CSDR requirements and is consistent with its overall objective, as an FMI, to keep a low risk profile, especially when considering the broad characteristics of the assets Euroclear Bank is exposed to.

The general principles of Euroclear Bank's investment strategy are mentioned in its Annual Report and detailed more in-depth in its Pillar 3 disclosure.

Investment guidelines

Euroclear Bank has defined different investment guidelines and restrictions for the reinvestment of its capital and proceeds from loss absorbing debt (Investment book), debt issuance proceeds (Liquidity book) and of the client deposits (Treasury book).

The objective of the Investment book is capital and liquidity preservation. The criteria for assets in the Investment book are:

- financial instruments are invested in EUR-denominated and ESCB-eligible[42] sovereign, supranational, agency and other sub-sovereign or state guaranteed debt instruments, freely transferable and without any regulatory constraint or third-party claims that could impair Euroclear Bank's ability to access them on the same business day when a decision to liquidate them is taken
- the issue or issuer must be rated AA- or higher by at least two out of the three rating agencies (Moody's, S&P and Fitch)[43] and confirmed by the internal rating
- the remaining time-to-maturity of the Investment book must not exceed five years and the Investment book must not bear foreign-exchange risk
- temporary cash positions to bridge cash flow gaps are allowed. They must however be re-invested with the central bank
- strict concentration limits apply and are monitored (e.g. credit rating, issuer, custody, etc.) Predefined thresholds are in place at the level of the issuer and credit rating concentration level, in addition to the regulatory credit concentration limits

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[42] *Eligibility criteria are defined by the European Central Bank and covered by the user standards in terms of eligible links*

[43] *The lowest rating provided by each agency must be used, except if decided otherwise by the Euroclear Bank CALCO.*

The objective of the Treasury book is to manage the day-to-day (reinvestment of long balances) cash flows and the objective of the Liquidity book (reinvestment of debt issuance) is to manage the liquidity needs under stress (intraday and end-of-day) and ensure Euroclear Bank can continue to respect its obligations.

Client deposits in cash can be invested on a secured basis through reverse repos or unsecured via outright purchases of high-quality securities, deposits at the central bank or to limited extent deposits with Euroclear Bank cash correspondents or other market counterparts.

Collateral received through reverse repo collateral must respect close-links. Forex Swap may be used to convert one currency into EUR, USD or GBP and can then be re-invested on a secured basis via reverse repo or left with the NBB (EUR) or BOE (GBP).

The criteria for the re-investment of client deposits of cash in assets are:

- multiple currency-denominated sovereign (or assimilated as such), supranational or agency debt instruments with minimum AA- rating that Euroclear Bank can monetise same day via a central bank or a committed repo facility
- financial instruments of the Treasury securities portfolio need to be eligible for the High-Quality Liquid Asset buffer of the Basel III LCR ratio
- the securities can have a remaining time-to-maturity of maximum six months
- strict concentration limits (per issuer and rating category) apply and are monitored

The risk appetite with respect to investment of client cash deposits in the Treasury book is calibrated via regulatory capital usage (operational limit implemented).

In addition, Euroclear Bank sets limits to manage credit exposures on individual Participants or counterparts.

The criteria for the re-investment of issuance proceeds in assets are:

- no currency mismatches
- financial instruments of the Treasury securities portfolio need to be eligible for the High-Quality Liquid Asset buffer of the Basel III LCR ratio
- reinvestment maturity up to maturity of debt
- align rate index between debt and re-investment
- apply and monitor strict concentration limits (per issuer and rating category)

Daily reporting is generated to report any excesses vis-à-vis the investment guidelines and restrictions to the CALCO[44] and Euroclear Bank Management Committee.

[44] *CALCO is a sub-committee of the Euroclear Bank Management Committee with some delegated authority and which provides assurance to the Euroclear Bank Management Committee on liquidity, credit and market risks as well as capital matters in line with Euroclear Bank's risk appetite.*

At least annually, the Credit department assesses the creditworthiness of the treasury counterparts, countries and issuers of securities held in the investment book by assigning an internal credit rating to them. Euroclear Bank Management Committee defines, per counterpart/credit rating, the limits (i.e. limits to market facilities) within which Euroclear Bank can undertake treasury transactions such as redeposits, reverse repos, Foreign Exchange swaps. Management and operational limits and thresholds are cascaded from the risk appetite, to ensure that Euroclear Bank remains within the risk appetite boundaries. No market facility can be granted to a counterpart without an appropriate assessment of the creditworthiness.

Principle 17: Operational risk

An FMI should identify the plausible sources of operational risk, both internal and external, and mitigate their impact through the use of appropriate systems, policies, procedures, and controls. Systems should be designed to ensure a high degree of security and operational reliability and should have adequate, scalable capacity. Business continuity management should aim for timely recovery of operations and fulfilment of the FMI's obligations, including in the event of a wide-scale or major disruption.

Key consideration (KC) 1: An FMI should establish a robust operational risk-management framework with appropriate systems, policies, procedures, and controls to identify, monitor, and manage operational risks.

Overview of the Operational Risk Management Framework

Euroclear Bank defines Operational Risk as the risk of loss resulting from inadequate or failed internal processes, people and systems, or stemming from external events[45].

Euroclear Bank's ERM Framework set an operation risk taxonomy based on industry standards including Basel Committee's recommendations and EBA Guidelines:

- Employment Practices & Workplace Safety Risk
- Clients, Product and Business Practices Risk
- Execution, Delivery & Process Management Risk
- Fraud Risk
- Information and Communication Technology (ICT)& Data Risk
- ICT Security Risk
- Business Disruption Risk
- Damage to or loss of physical assets Risk
- Custody Risk
- Model Risk

The *Operational Risk Management Board Policy* (Board Policy), set by the Euroclear Bank Board, defines the Operational Risk Management Framework, setting key principles for identifying, assessing, monitoring and managing operational risk at all levels and is developed and maintained in accordance with market practices and regulatory guidelines for risk management.

[45] *This definition excludes legal and compliance risk, a separate risk type in Euroclear, see also Principle 3 KC1*

Supporting the Board Policy, there are several *Operational Risk Policy Handbooks* ('Handbooks') that describe the roles and responsibilities for managing these risks, all relevant risk processes and the information needed to make sound management decisions. The Handbooks are supplemented as appropriated by practical Implementing and operating procedures set by First Line.

Examples of *Operational Risk Policy Handbooks*:

- *Human Resources Security Policy Handbook*
- *New Products & Significant Changes Euroclear Bank Board Policy*
- *Portfolio, Programme, Project and Change Management Policy Handbook*
- *Admission policy handbook*
- *Anti-Fraud Policy Handbook*
- *Anti-Bribery and Corruption Policy Handbook*
- *Information Security Management System Policy Handbook*
- *Physical Security Policy Handbook*
- *Outsourcing and Critical Service Providers Group Policy*
- *Network Management Policy Handbook*
- *Code of Ethics and Business Conduct*
- *Business Continuity Management Policy Handbook*
- *Model Risk Management Policy Handbook*

Principle 2 of the Euroclear Bank *Operational Risk Management Board Policy* states that Euroclear Bank needs to identify, assess, manage and report its Operational Risks on an ongoing basis in line with its and the Group's Risk Appetite, as well as the Enterprise Risk Management Framework and applicable legal and regulatory requirements.

Identification

To identify and assess Operational Risks, Euroclear Bank must adopt and apply the processes, tools, templates and methodologies developed and made available by the Risk Management division. Amongst others these tools, techniques, templates and methodologies are:

- monitoring performance and risk indicators in the business (e.g. settlement volumes, settlement failures, service availability, number of operational incidents, etc.)
- performing systematic risk assessments of new products or services
- identifying single points of failures (SPOFs). A SPOF is defined as part of a system -people, processes, IT, including critical utilities and critical service providers, with no alternative or redundancy in place that, if it fails, would result in a critical operation or services being stopped
- identifying, analysing and recording of operational risk events (including Near Misses) caused, for instance, by inadequate or failed processes, people and systems, or by external factors
- performing on an annual basis a Risk, Control and Self-Assessment (RCSA)

Management and monitoring

To manage the risk, Euroclear Bank designs, implement and operates adequate internal controls. These controls need to be reviewed, monitored and tested on a regular basis to provide effective risk mitigation.

When needed, Euroclear Bank uses appropriate, change management and project management processes to mitigate operational risk arising from modifications to its operations, systems and controls.

Euroclear Bank tracks relevant Operational Risk data (e.g., operational risk events, control gaps, risks,..) in risk repository databases or the GRC tool. (This data is used to report whether established objectives and targets are met and timely shared with internal/external stakeholders to enable sound risk management and decision making.

Risk management tools

Euroclear Bank's key controls are identified, monitored and regularly assessed in the Positive Assurance Report. Any defects identified (e.g. incidents, control failures, external events) results in an adjustment of the control system and is recorded in the Positive Assurance Report. This report demonstrates whether controls are adequate and effective. The most important control weaknesses and the related action plans are pulled together for the bi-annual review of the Internal Control System in the ICS report.

Management of operational risk events (incidents) is managed through dedicated databases for logging IT and non-IT operational incidents across Euroclear Bank.

All issues, risks and control gaps identified by any of the 3 lines of defence are recorded in a dedicated tracking tool (with detailed information and action plan) allowing for effective assessment and follow-up. Euroclear Bank promotes pro-active identification of issues and risks.

The effectiveness of Euroclear Bank's Tools, controls and procedures at mitigating the impact of operational risks is also assessed and evidenced in Euroclear Bank's annual ISAE 3402 report.

Fraud related policies, processes and controls

Euroclear Bank has an Anti-Fraud Framework, described in the *Anti-Fraud Policy Handbook*, which complements amongst others the *Code of Ethics and Business conduct*, the *Speak Up Policy Handbook, Legal and Compliance Risk Board policies*, and the *Anti-Bribery and Corruption Policy Handbook.*

All staff is informed on how to report any evidence or suspicion of fraudulent activities. All staff must on a regular basis, follow awareness sessions and complete a compliance test including questions related to fraud prevention.

Euroclear Bank has implemented specific fraud risk related controls (e.g. physical segregation and security on high-risk areas and access badge, controls centred on Information Security -like password protection, segregation of duties, access management, clean desk policy, endpoint security[46] (see also KC 5), data leakage prevention monitoring).

HR related policies, processes and controls

Euroclear Bank has several procedures currently in place to employ, train and retain qualified personnel, as well as mitigate the effects of personnel turnover or overreliance on key personnel.

For each location Euroclear Bank recruits candidates that match the qualifications, skills, experience and expertise relevant for the vacant position. For each type of profile an adequate sourcing strategy is developed. A series of competency-based interviews, both by business persons and Human Resources division, ensure a rigorous selection process.

All applicants for employment are subject to pre-employment screening prior to employment by Euroclear. The level or type of screening varies, depending on applicable laws and the degree of access that the successful applicant will have to sensitive information. Personnel security measures reduce the risks of theft, fraud, or misuse of facilities by ensuring that potential employees are suitable for their prospective roles.

Projects, programmes and change management

As part of its operational risk management framework, Euroclear Bank has defined guidelines - outlined in the *Portfolio, Programme, Project and Change Policy Handbook* - for portfolio, programme, project and change management policy.

The objective of this policy handbook is to help enable successful business and IT change, so the Euroclear can achieve its strategic objectives. It supports the organisation in increasing the predictability of delivering change initiatives across people, process, technology and data, and mitigating the risks arising from these changes, which can be IT and non-IT related.

They reference recognised industry standards (i.e. MoP©, MSP©, Prince 2®, SCRUM, KANBAN (Lean), SAFe, Prosci® Research) and approaches which have been tailored to meet our needs. To enable further maturity increase, this policy handbook is complemented with additional procedures, providing more details on the different steps of these methodologies.

Urgent changes to the systems lately identified in context of program and project are managed by processes relying on standard risk assessment practices to authorise or reject such requests.

Changes to operational applications and their supporting systems and networks are planned, developed and implemented in a controlled manner as defined in the *Portfolio, Programme, Project and Change Policy Handbook*.

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[46] *The security around devices -accessing the network of Euroclear*

The System Development Life Cycle (SDLC) methodology takes into account the resilience of the infrastructure and applications which need to be respected for all critical infrastructure components and applications.

In accordance with the SDLC methodology, each project establishes a project quality plan describing all elements related to the management of quality, including roles and responsibilities and any justified deviations from the standard Managed Projects process and methods. Project quality assurance teams define the project's High-Level Test and Launch Strategy (HLTLS) and production acceptance criteria are evaluated before launching in production.

SDLC IT Controls are established to help mitigate project risks, increase project quality and verify adherence to the methodology. These controls are continuously tested by the Control Assurance team to evaluate their effectiveness, remediating actions are followed up with project teams and results are reported to management.

IT teams test changes within specific environments, depending on the nature of the changes and in line with the SDLC methodology and the project's HLTLS to validate changes and ensure non-regression before launching in production. The types of tests and associated environments used include development (unit test), functional testing (integration and system validation), permanent test infrastructure environment (non-functional requirements) and pre-production environment (acceptance).

IT prepares, reviews and signs-off launch scenarios for any planned change. A roll-back strategy and associated actions must be defined and included in the launch scenarios.

Key consideration (KC) 2: An FMI's board of directors should clearly define the roles and responsibilities for addressing operational risk and should endorse the FMI's operational risk management framework. Systems, operational policies, procedures, and controls should be reviewed, audited, and tested periodically and after significant changes.

Roles, responsibilities and framework

The governance structure of Euroclear Bank is documented under Principle 2.

Euroclear Bank is a Central Securities Depository (with a limited purpose banking license) and operates a securities settlement system. Most of its services rely on automation and use IT systems and applications.

The primary responsibilities of the Board are to define and oversee the implementation of the strategy and objectives of Euroclear Bank, set its overall risk strategy (including risk appetite), establish Euroclear Bank Risk Management Framework and desired risk culture and regularly review and oversee the implementation of the policies and to supervise Euroclear Bank's Management Committee (decision-making, actions and performance of the Management Committee).

This encompasses the framework for identification, management and monitoring of Operational Risk for which the Euroclear Bank Board has approved a dedicated policy, further implemented by the different Euroclear Bank and ESA divisions under the supervision of the Euroclear Bank Management Committee. For more details on the risk management framework, please refer to Principle 3.

The business objectives of Euroclear Bank, as endorsed by its Board, encompass systems safety, efficiency, resilience and reliability.

The Euroclear Bank Management Committee is accountable to the Euroclear Bank Board for the management of operational risk and has set up a specific committee, the Euroclear Bank Risk Operating Committee (ROC), to ensure day to day follow up, composed of representatives of all functions (business, support and control).

The ROC has the delegated authority from the Euroclear Bank Management Committee to:

- review the risks introduced by new or changed services or products, validate mitigating actions and accept or reject the residual risk (up to medium risks). The Euroclear Bank Management Committee reviews high and critical risks. Residual risks rated as critical must be mitigated and cannot be accepted unless approved by the Board
- monitor the evolution of the risk profile and control environment, including e.g., the risk review of operational issues with a financial or reputational impacts, business continuity matters, compliance and ethical topics and issues arising during the implementation phase of new projects, etc.
- monitor the service level management of outsourced services
- monitor business continuity matters as well as local security matters (e.g. health and safety, personnel security)

Finally, the Three Lines Model designed by the Euroclear Bank Board and managed by the Euroclear Bank Management Committee facilitates the effective operation of Euroclear Bank operational risk. Each line plays a distinct role in the effective management of risks:

- the First Line is the owner of the risk and takes all necessary actions to manage them
- in the Second Line:
  - Compliance & Ethics ensures there is adequate monitoring of compliance with legal and regulatory requirements
  - Risk Management provides a robust and independent oversight of management's risk-taking activities
- the Third Line (Internal Audit) provides the ultimate level of independent assurance to the Euroclear Bank Management Committee and Euroclear Bank Board on the adequacy and effectiveness of governance, risk management and internal controls

More information regarding Euroclear Bank's three lines model and Risk Management Framework is provided in Principle 3.

Review and testing

There are various mechanisms in place to ensure regular review and testing of risk policies and procedures, and control systems at large.

Policies, Handbooks and implementing procedures are reviewed as per the defined frequency or as needed (due to changes in regulation, market practices or business evolution) and are approved by relevant governance body.

Updated policies and procedures are reviewed with adequate related governance process, followed by roll-out and implementation.

Regular business control and monitoring processes are in place, supporting the adequate and effective risk and control environment, in line with policies. Their outcome is reported and discussed in management performance meetings at different levels in the organisation (from first line shop floor meetings and processes monitoring to reviews by the ROC and Euroclear Bank Management Committee).

First line testing covers a broad range of topics (for instance business continuity as part of the Business Continuity Plan tests- see KC 6, - IT testing – see KC 1, and KC 4, etc.).

Testing of control design and effectiveness is performed by first line control units applying a risk-based approach to derive the nature and frequency of control testing. The results are integrated into the PAR and reported to Management.

The Operational Risk Management Framework is subject to both internal and external audits. Control testing is performed by Internal Audit as part of their annual audit plan and by external auditors, both as part of the ISAE 3402 review and in the context of the semi-annual review of Euroclear Bank's Financial statement.

Key consideration (KC) 3: An FMI should have clearly defined operational reliability objectives and should have policies in place that are designed to achieve those objectives.

Operational reliability objectives

The Euroclear Bank Risk Appetite, as approved by the Euroclear Bank Board, includes objectives for business disruption risk. Euroclear Bank Board objectives are cascaded down to define operational reliability objectives, which include, amongst others, uptime minutes of the systems supporting critical functions as well as system recovery time.

ESA supports Euroclear Bank by providing IT services under an outsourcing arrangement. The performance of ESA is assessed and monitored on a regular basis through the use of qualitative and quantitative Key Performance and Risk Indicators. Executive Management and CTO regularly meet their IT representatives, where relevant evidence is provided by IT to monitor and control the performance and compliance against agreed-on directions and control objectives. Each operational reliability objective is reviewed and cascaded for management reporting purposes.

Qualitative objectives are stated in the *Operational Risk Board Policy* and other policies and policy handbooks related to operational risk management and published on the intranet for employees. Further quality statements can be found in the sets of control objectives used and within the departments' own internal process and standards documentation.

Euroclear Bank is ensuring high standards of operational reliability and security, as well as adequate availability, integrity and confidentiality of the information. This is defined in the *Information Technology Framework Board Policy* setting out the principles for the governance and management of the end-to-end IT environment.

Euroclear Bank is maintaining appropriate IT tools, ensuring high standards of operational reliability and security, as well as adequate availability, capacity and integrity and confidentiality of the information.

Key consideration (KC) 4: An FMI should ensure that it has scalable capacity adequate to handle increasing stress volumes and to achieve its service-level objectives.

Capacity management

Capacity management is in place to ensure that capacity meets current and future business requirements. There is a continuous monitoring of defined infrastructure services (daily review and dashboards) to identify potential issues ahead of time. Actions are taken to increase capacity (or re-balance workload) as thresholds are approaching.

Since 2020, the Capacity and Performance Assessment of Business Services is managed via a continuous assessment cycle and included in the reporting produced by IT teams and discussed with CTO office. In case a risk is identified during the assessment, an ad hoc report including findings and remediation action plans will be presented to the ROC for information and for monitoring purposes.

Capacity monitoring and management follow the ITIL[47] framework. The management of capacity and scalability is part of the Audit Universe, hence an Audit is performed in this area

Capacity management within project lifecycle

The project lifecycle methodology, developed and adopted by Euroclear Bank, is designed to ensure that both functional and non-functional requirements of Euroclear Bank (including resilience, stress testing, capacity, expected service-levels…) are taken into account in the design and implementation of IT systems, and that the necessary testing is performed in accordance with the project's test and launch strategy. At the launch of a new technology, a test summary report is produced for sign-off.

[47] *« Information Technology Infrastructure Library », an international standard for IT service management.*

Key consideration (KC) 5: An FMI should have comprehensive physical and information security policies that address all potential vulnerabilities and threats.

Physical security

Depending on the criticality of the information/data to be protected, requirements for physical security are defined in the *Information Security Management System Policy Handbook* and further documented in the Physical Security implementing procedure. This is being complemented by the creation of a set of Group Physical Security Standards and process guide.

Euroclear Bank ensures the implementation of physical security measures to prevent unauthorized physical access, loss, damage, theft, interference to Euroclear Bank's information assets and processing facilities and interruption of Euroclear Bank's operations. The facilities where critical information is stored or processed are constructed and arranged in a way that information is protected from physical and environmental threats

The physical security takes into account applicable legislation, general best practices, both as defined by the parent group and as recommended by international standards like ISO 27001 and 27002.

Information security

Consistent with the Basel Committee's recommendations, information security risk is a component of operational risk. Information security is defined within Euroclear group-wide *Operational Risk Board Policy* as the protection of client's data as well as Euroclear critical logical and physical assets, resources and critical data by preserving their:

- confidentiality: ensuring that information is accessible only to those authorised to have access and is not misused
- integrity: safeguarding the accuracy and completeness of information
- availability: ensuring that authorised users have access to information when they need it
- compliance: ensuring that relevant legal and regulatory requirements in relation to the protection of information are adhered to

Euroclear Bank's Information Security Management System Board Policy:

- sets the principles on how Euroclear Bank maintains the required level of information security and how Euroclear Bank safeguards its information assets
- describes the high-level scope of Euroclear Bank's control framework as well as roles & responsibilities
- is holistic and addresses threats to confidentiality, integrity and availability in line with its low-risk appetite for operational risks
- is based on market best practices and recognised industry standards such as ISO27001:2013
- is designed to address information security's legal requirements for financial market infrastructures

- describes controls covering the different domains of information security in line with ISO 27002, such as Human Resources security, Information Asset security, Access control, Cryptography, Operations security, etc.

In addition, Euroclear Bank uses other frameworks where they bring value in terms of control definition, implementation or measurement. For example, CIS controls for technical implementation on platforms or CCM controls for Cloud deployments. All these references are mapped with the ISO to obtain global and homogenous assurance.

The supporting documents (Standards and Procedures) are being developed in alignment with the ISO 27002:2013 list of controls.

Euroclear Bank monitors and manages the cyber threat landscape, regularly reviews and actively mitigates cyber risks. Euroclear Bank aims to achieve a level of cyber resilience commensurate to its role as critical financial market infrastructure.

Together with the Euroclear Bank Management Committee, the Chief Information Security Officer oversees and coordinates information security efforts across Euroclear Bank and supports the development of information security policies that are consistent with business objectives, risk appetite and the Enterprise Risk Management Framework. The Euroclear Bank Management Committee retains responsibility for monitoring and overseeing policies, issues and exceptions that are relevant to Euroclear Bank and reports any relevant issues to the Business Resilience and Information Security team.

Key consideration (KC) 6: An FMI should have a business continuity plan that addresses events posing a significant risk of disrupting operations, including events that could cause a wide-scale or major disruption. The plan should incorporate the use of a secondary site and should be designed to ensure that critical information technology (IT) systems can resume operations within two hours following disruptive events. The plan should be designed to enable the FMI to complete settlement by the end of the day of the disruption, even in case of extreme circumstances. The FMI should regularly test these arrangements.

Please refer to Principle 13 (‘Participant-default rules and procedures’ for further elaboration on the cases of Participants default which is a specific type of possible incident that could cause disruption).

Business Resilience Management Framework

The Business Resilience Management Framework comprises different documents:

- *Euroclear Bank Operational Risk Board Policy*: This Policy sets the minimum requirements for Euroclear Bank for the effective management and independent oversight of operational risk - including business disruption risk - in accordance with the Euroclear group's Risk Appetite. It defines key principles for business disruption risk management and the key controls that cover scenario analysis, business impact analysis, response plans and recovery measures
- *Euroclear Bank Business Resilience Management Policy Handbook*: This Policy Handbook introduces the Business Resilience Management System and its key principles, risk scenarios and governance rules. As part of these principles, it defines Recovery Time Objectives (RTO) for critical activities within two hours and specifies that Euroclear Bank must take all reasonable steps to ensure that settlement is completed by the end of the business day even in case of a disruption. It also details the requirement for IT and offices resilience and the incident escalation and crisis management processes
- *Euroclear Bank Corporate Business Continuity and Disaster Recovery Plan* which outlines the main components of Euroclear Bank response structure to any business disruption. This document is complemented by playbooks providing guidance to crisis management teams and detailed transversal and departmental response plans and procedures. Collectively, this whole set of documents assists the organisation with response and recovery and constitutes a comprehensive, robust, and complete business continuity plan

In accordance with legal requirements, Euroclear Bank's Business Resilience Management framework describes roles and responsibilities, and the adopted approach.

Threats' assessment: Considering internal and external sources, ESA and Euroclear Bank identify and monitor threats that may impact its assets and lead to a business disruption and on an annual basis, Euroclear Bank performs a threats' assessment with the objectives to:

- Identity, monitor and assess the threats that may disrupt its functions and business services and potentially cause severe impact/ consequences
- Identify gaps in prevention / protection measures that reduce the likelihood of the threats to cause impacts and in detection, response and recovery measures that reduce the impact of the specific threat

Risk scenarios are an important part of Euroclear Bank Business Resilience Management Framework. Euroclear Bank identifies and regularly evaluates several impact-based risk scenarios ('Extreme but Plausible Scenarios') of large-scale disruptions to which it may be exposed. Internal and external threats are considered in this assessment and mapped to the scenarios to ensure the adequate coverage of all risks. These scenarios and the business resilience threats are assessed against the adequacy of Euroclear Bank response plans and the ability to recover critical activities within two hours.

Euroclear Bank is driving initiatives to improve its readiness to respond to some extreme scenarios.

The Euroclear Bank Management Committee approves the key business resilience management principles and controls.

Business Impact Analysis

The Business Impact Analysis is an important component of Euroclear Bank's business continuity management and therefore the Euroclear Bank Business Resilience Framework.

A formal Business Impact Analysis is used to identify the critical activities and their recovery time objectives for each of the business processes. During the Business Impact Analysis, threats and risks associated with business process' interruptions are identified and assessed by determining the effect of loss, interruption, or disruption to business on the function of each department and thus on the organisation as a whole. The Analysis considers both the short and long-term effects of an incident, and identifies dependencies on people, information, IT and facilities. The output of the Business Impact Analysis is used to form business continuity strategies and solutions.

Data centres

Euroclear has three data centres (DC):

- two data centres (DC1 and DC2) provide real-time synchronised data mirroring and act as the primary and secondary data centre. The distance between these two data centres is sufficient to prevent both data centres from being affected by the same event (such as unplanned utilities outage, damage to or loss of facilities systems, damage or loss of physical assets, incidents in office areas/external exposures, fires or certain natural hazards). Euroclear Bank's critical services are supported by resilient/adequate:

    - IT platforms (hardware and software)
    - networks configurations
    - communication means
    - capacity to process all transactions before the end of the day even in circumstances where a major disruption occurs

- a third data centre (DC3) receives asynchronously replicated data. It allows recovery of critical services in a few hours in the unlikely event where both other data centres are unavailable (like a coordinated attack or a major earthquake)

The risk profile of the three data centres is reviewed regularly and more specifically as part of the threats assessment.

Synchronous mirror production

The core processing systems synchronously mirror production data between DC1 and DC2. Hence, the status of all transactions is known even in case of a disruption affecting one data centre.

The core processing systems also asynchronously mirror production data between the active data centre and DC3. In the extreme case that both DC1 and DC2 would fail, a data loss of less than one minute (dependent on system volumes at time of failure and excluding rolling disaster) could occur.

Data Loss Response plans have been developed to minimise the impact of data loss whilst aiming to resume computerised operations in a time period which does not cause unnecessary strain on market stability. Depending on the circumstances, Euroclear Bank could decide to resume operations while some reconciliation activities are still being run in parallel (see the *Terms and Conditions governing use of Euroclear* for more details).

The Data Loss recovery principles are:

- records of transactions held by National Central Banks (NCBs), and Central Securities Depositories (CSDs) occurring during the suspected period of data loss will be considered by Euroclear to be the 'master' source
- at all times Euroclear is the 'master' source for clients. This may result in previously executed transactions requiring re-execution by clients following resumption of operations
- clients will be informed of their obligation to evaluate the status of trades throughout and following recovery

System resilience

The system development methodology adopted by the IT division includes principles and guidelines with regard to resilience of the infrastructure and applications which need to be respected for all critical infrastructure components and applications.

Compliance with these principles and guidelines is evaluated for every project or change as part of the production acceptance criteria. The core processing systems and networks are designed to provide resilience through the use of mechanisms such as the mirroring (synchronous) of production data, the use of fault tolerant computers or the resolution of single points of failure.

The provision of the communication lines is split across a number of telecommunications suppliers thereby providing additional protection against a single point of failure.

Secondary site

Euroclear has permanently deployed staff 'dual offices' with geographically dispersed business operation sites to limit the risk that a single event will impact the two locations. In addition, Euroclear has implemented a hybrid work model (combining office work with remote work), thus further reducing the risk associated with the loss of an office building. Business resumption is tested on a regular basis to make sure that in case one site or its office building is unavailable, all critical activities can be operated from a different site and remotely.

Crisis management

To ensure a systematic and coordinated response to unexpected events, Euroclear established a three-tiered Bronze-Silver-Gold crisis management structure. These three levels deal with operational - tactical - strategic issues respectively.

Communication to internal and external parties during and after an incident forms an essential part of the incident response. The Crisis Management teams are required to assess the need for communication and if so, to communicate to clients, clients facing staff, other staff, and, from Silver on, also to supervisory authorities and in case of Gold to the press.

Client communication is to be initiated as soon as possible after the calling of the crisis management meeting.

Seeing that business and technical environments become more and more complex, Euroclear developed crisis management playbooks to support and guide its crisis management teams on how to efficiently identify impacts, coordinate, respond to and communicate during an incident. All 'Extreme but Plausible Scenarios' have been covered by the relevant playbooks.

Review and testing

To ensure that business continuity plans and contingency arrangements are consistent with Euroclear's business resilience management principles, all components are regularly reviewed and tested.

Euroclear Bank maintains a multi-year programme of testing and exercising that covers all risk scenarios. It consists of different types of tests and exercises (walkthrough, tabletop, live tests etc.) and can target different levels of the crisis management structure (Bronze and Silver).

Examples of regular testing include:

- IT disaster recovery testing: Production is transferred from DC1 to DC2 on a regular basis throughout the year and a test is performed once per year with DC3
- loss of office simulations and live tests organised at least once a year for each department running any critical function
- crisis management exercises and walkthrough sessions organised each year for crisis management teams
- testing of contingency arrangements with external parties (clients, business partners, critical providers, other FMIs…)
- involvement in market-wide exercises where and when they are organised

Tests of business continuity solutions and recovery plans including the switch of processing between sites are designed to not impact clients (when relevant). This means that clients will not know from which centres and sites Euroclear Bank services are provided, or if there was a switch of the processing site. There is no particular action for a client to take during such a business continuity test.

Reporting of the testing and its outcome is shared with the Euroclear Bank Risk Management function and Operating Committee, Euroclear Bank Management Committee, and with Audit and Risk Committee (when relevant).

Key consideration (KC) 7: An FMI should identify, monitor, and manage the risks that key clients, other FMIs, and service and utility providers might pose to its operations. In addition, an FMI should identify, monitor, and manage the risks its operations might pose to other FMIs.

Risks to the FMI´s own operations

Euroclear Bank continuously seeks to identify and manage risks posed to its business and the effective delivery of its services. Euroclear Bank also endeavours to limit its own contribution to systemic risk and to ensure it remains within its risk tolerance.

The Operational *Risk Management Board Policy* sets out key operational risk management principles, while the *Operational Risk Management Policy Handbook* defines specific methods for the identification, measurement, monitoring and reporting of operational risks, in line with the general risk framework.

Euroclear Bank has also developed tools and techniques for the handling of specific risks[48], e.g. single points of failures, incidents, manual intervention, etc.

The operational risk management is further elaborated in dedicated frameworks, including among others,:

- business continuity management
- client admission & on-going monitoring
- information security management
- services by third parties (covering Outsourcing/Critical Service Providers and Links, Market infrastructure and Agents[49])

Key Participants, Outsourcing/Critical Service Providers and key agents (network management) are covered by the Business Continuity Plan arrangements where relevant.

Euroclear Bank has set up a systemic risk framework, both from the perspective of its own resilience to systemic risk (i.e. a systemic risk crystallising in the market and hitting Euroclear Bank) and its potential contribution to systemic risk (i.e. a systemic risk coming from Euroclear Bank and impacting the market).

[48] *See Principle 17, KC 1*

[49] *The Euroclear Bank Network Management Policy Handbook defines the criteria for the set-up and evolution of a CSD link or counterpart.*

Critical Service Providers (CSP)

Euroclear may outsource certain services and activities to third-party providers, wherever those providers are, inside or outside of the Euroclear group.

Euroclear has designed a robust outsourcing framework, which consists of a defined life cycle which relies on a strong governance, an internal control system and Euroclear best practices around the management of risks, including conflicts of interests.

Service delivery is reviewed on a regular basis. Services are measured and compared with targets to identify whether the objectives are met, and where applicable, what actions need to be taken to improve the service and mitigate identified risks to an acceptable level.

IT services

The IT services have been outsourced to a service provider: ESA which is the parent company of Euroclear Bank. The relationship with the provider is defined in a formal agreement including service level agreements. Service delivery is reviewed on a regular basis through qualitative and quantitative Key Performance Indicators (KPI). Corrective actions are requested when the agreed KPIs are not met.

Users and links

Euroclear Bank has defined robust admission criteria to avoid that a Participant could be disruptive for the Euroclear system (see Principle 18 for more information).

Euroclear Bank furthermore continuously invests to encourage Participants to manage and contain the risks they pose to Euroclear, by keeping them informed through user documentation, extensive operational reporting and training, relationship (via user committee or client facing relationship) and by applying other types of measures (i.e. charges to deter riskier behaviour, sponsorship process at admission) – as detailed in Principle 18 and Principle 3 KC 2.

In the framework of its links reviews, Euroclear Bank reviews operational risks aspects, including the business continuity plans of all counterparts involved in the CSD link. See earlier in the text, under Business Continuity considerations and Principle 20 for more details.

Risks posed to other FMIs

As an FMI, Euroclear Bank sits at the centre of international financial flows and provides services to many market players. Managing systemic risk is thus an essential part of our job. The first line is fully aware of this and is managing risks which could lead to systemic risks on a day-to-day basis, in line with guidelines outlined in Policy Handbooks. High-level systemic risk principles were introduced in the *Corporate Risk Group Policy* and have been further detailed in a *Systemic Risk Group Policy*.

While the *Corporate Risk Group Policy* defines the principles and minimum requirements of the main risk areas, specific risk policies (such as the *Systemic Risk Group Policy*) further develop such principles and minimum requirements.

Euroclear Bank is also monitoring activities of other FMIs (e.g., CCP) on a regular basis to increase awareness on their activities and the business evolution. Euroclear discusses systemic risks with other FMIs, either in the context of the FMI Forum (a group of a dozen FMIs spanning all the post-trade layers) or the European CSD Association (ECSDA).

Euroclear Bank also performs ad hoc analyses based on past and on-going crises, where systemic risks sometimes feature prominently. Specifically for financial and operational risks posed in the context of the Bridge link with CBL, the main risks that Euroclear Bank can pose to CBL (and vice-versa) are:

- a scenario where one of the CSDs is not operational and cannot process settlement transaction files from the other. To mitigate this risk, Euroclear Bank has together with CBL developed common operating contingency procedures. In addition, the Business Continuity Management framework consequences of a scenario where one of the CSDs is not operational at all have been analysed and dedicated joint contingency scenarios have been developed accordingly
- credit risks as elaborated in Principle 4
- liquidity risks as elaborated in Principle 7

Principle 20 (‘FMI links’) further elaborates on the risks posed to or by other FMIs.

Principle 18: Access and Participation requirements

An FMI should have objective, risk-based, and publicly disclosed criteria for participation, which permit fair and open access

Key consideration (KC) 1: An FMI should allow for fair and open access to its services, including by direct and, where relevant, indirect clients and other FMIs, based on reasonable risk-related participation requirements.

Euroclear Bank's access rules allow fair and open access to applicants for participation in the Euroclear System. The rules apply evenly to all applicants on the basis of objective and non-discriminatory criteria. Also, access rules are published and generally accessible on my.euroclear.com, and prospective applicants are kept informed in a timely manner of any possible changes.

Fair and open access

Euroclear Bank is licensed as a CSD and it operates a Securities Settlement System governed by the laws of Belgium. Access to the system is subject to legal requirements outlined in:

- the law of 28 April 1999 implementing Directive 98/26/EC (also referred to as Settlement Finality Directive) (SFA)
- article 33 of CSDR supplemented by Article 89 of Commission Delegated Regulation (EU) 2017/392 of 11 November 2016 with regard to regulatory technical standards on authorisation, supervisory and operational requirements for central securities depositories ('CSDR RTS')
- EU Directive 2018/843 of 30 May 2018 ('Fifth AML/CTF Directive') on the prevention of money laundering and terrorist financing

Euroclear Bank operates an open and transparent access and participation process, with publicly disclosed, non-discriminatory participation requirements.

All Participants with whom Euroclear Bank has a contractual relationship are direct Participants.

Governance of the admission process

The admission process is documented in the Operating Procedures of the Euroclear System that form part of the *Terms and Conditions governing the use of Euroclear* and the Internal Operating Procedure - Euroclear Bank Admission Process. The Euroclear Bank Management Committee has the decision on granting or refusing access to any applicant, based on a recommendation made by a multidisciplinary internal steering committee (the Group Admission Committee or GAC).

Minimum requirements for applicants

Applicants need to comply with three pre-admission conditions and five admission criteria (see below) to become a Participant to the Euroclear System. These admission criteria are risk-based. Upon admission, the Participant must comply with the admission criteria on an ongoing basis.

Access to Euroclear Bank is granted on business, legal and risk considerations, which take into account the regulatory environment governing Euroclear Bank and the limited risk profile Euroclear Bank aims to maintain as an FMI. As such, Euroclear Bank must:

- not admit natural persons, as those may not participate in a Securities Settlement System according to the SFA
- allow fair and open access to legal persons intending to become a Participant in the Euroclear System with due regard to risks to financial stability and orderliness of the financial markets
- set risk-related admission criteria to control the risks that could arise from Participants using the Euroclear System and ensure that Participants meet these admission criteria on an on-going basis
- identify and assess specific risks resulting from the admission of entities that are not subject to supervision in the EU
- comply with applicable legislations and regulations to Euroclear Bank (e.g. Anti-Money Laundering (AML) legislation, applicable CSDR articles, reporting obligations under MIFID)

Euroclear Bank will at all times look to protect the integrity of the Euroclear System as a Securities Settlement System with a broad variety of Participants. Euroclear Bank will therefore take into consideration any relevant risk for Euroclear Bank, the Euroclear System or its Participants when assessing any application file.

Participation criteria and requirements

Prerequisite to admission to Euroclear Bank

An applicant must meet the following preliminary conditions:

- be established in a jurisdiction that is not subject to sanctions or not subject to a call for action from the Financial Action Task Force (FATF) in the context of the fight against money laundering and terrorism financing
- its participation in the Euroclear System will not cause Euroclear Bank to breach any law, order, Sanctions or regulation
- provide adequate information enabling Euroclear Bank to meet the applicable anti-money laundering and terrorism financing requirements that apply to Euroclear Bank

Categorisation of applicants

An applicant must demonstrate that it meets the five admission criteria listed below. These are the same for all applicants, with additional requirements applicable in certain circumstances depending on whether the applicant is a standard client, a specific regulated client or a specific[50] client to reflect the relative risks associated with the client-type.

Standard Participants	- are licensed as a credit institution or investment firm, whether or not in the EU - are a public authority or a publicly guaranteed undertaking, whether or not in the EU - are located in the EU and licensed as a CSD in the meaning of CSDR - are located in the EU and licensed as a central counterparty in the meaning of EMIR - otherwise fall under the supervision of a competent authority in the meaning of the EBA Regulation, the EIOPA Regulation, the ESMA Regulation or EMIR
Specific Regulated Participants	- are subject to supervision in a jurisdiction outside the EU (other than as a credit institution or investment firm), or - are listed on a stock exchange
Specific Participants	neither subject to supervision in their jurisdiction nor listed on a stock exchange

This approach takes into account the applicant's exposure to anti-money laundering regulations and applicable sanction regimes, regulatory/supervisory status and place of permanent establishment.

As provided in the *Operating Procedures of the Euroclear System*, Specific Regulated Participants and Specific Participants must comply with specific additional requirements to mitigate potential additional risks resulting from their participation in the Euroclear System. They must bring additional appropriate evidence enabling Euroclear Bank to adequately consider and handle their application.

[50] *As per the implementation of the SFA.*

Admission criteria

Any applicant is required to meet the following five admission criteria:

- Adequate financial resources

  Demonstrate the possession of adequate financial resources to run its business on a 'going concern' basis and meet its obligations towards Euroclear Bank, the Euroclear System and its Participants.

- Operational and technological capacity

  Demonstrate adequate operational and technological capacity to participate in the Euroclear System, to ensure business continuity and avoid material adverse impact on the integrity of the Euroclear System.

- Legal capacity

  Demonstrate its legal capacity and its ability to accept and comply with the *Terms and Conditions governing use of Euroclear* (i.e. the rules of the Securities Settlement System in the meaning of the Settlement Finality Directive 98/26/EC).

- Internal control and risk management

  Have an appropriate internal control and risk management framework in place to preserve the integrity of the Euroclear System.

- Ethical standards

  Have implemented adequate ethical standards that protect the integrity and reputation of the Euroclear System.

The adequacy of the admission criteria is regularly reviewed taking into account both regulatory changes as well as business evolution.

Euroclear Bank may also impose additional conditions on applicants on a risk-based basis. For instance, additional conditions may be imposed in order to avoid that Euroclear Bank becomes exposed to additional reporting, disclosure or other legal, tax or regulatory requirements.

Notification process

The admission is notified in writing no later than one month after the application file has been received.

Upon positive decision:

- the applicant should promptly open an account
- the admission is valid for six months. If during that period, the Participant did not open an account, the applicant will be subject to a re-admission process prior the opening of its first account. The flow of a re admission is exactly the same as an admission

Any applicant can be refused for non-conformity with one or several admission criteria. If an application is refused, the applicant is informed in writing explaining the reasons for its rejection based on a comprehensive risk assessment. The applicants have the right to complain to Euroclear Bank's competent authority (the National Bank of Belgium).

Key consideration (KC) 2: An FMI's participation requirements should be justified in terms of the safety and efficiency of the FMI and the markets it serves, be tailored to and commensurate with the FMI's specific risks, and be publicly disclosed. Subject to maintaining acceptable risk control standards, an FMI should endeavour to set requirements that have the least restrictive impact on access that circumstances permit.

Euroclear Bank admission criteria mentioned in KC 1 comply with the SFA, CSDR, AML & Sanctions regimes, amongst other applicable regulations. The criteria are justified by safety and aim to limit either specific risks, including financial risks (financial resources requirement), operational risks (technology capability criterion) and legal risks (legal capacity requirement), or risks in general (internal controls and risk management and ethical standards).

The admission process and criteria are documented in the *Operating Procedures of the Euroclear System*, which form part of the *Terms and Conditions* and are publicly available on my.euroclear.com

Key consideration (KC) 3: An FMI should monitor compliance with its participation requirements on an ongoing basis and have clearly defined and publicly disclosed procedures for facilitating the suspension and orderly exit of a client that breaches, or no longer meets, the participation requirements.

Sponsorship process

Euroclear Bank has set up a risk-based sponsorship process to ensure ongoing monitoring of and compliance with the Admission Process described under KC 1.

A sponsorship consists of an initial know your customer (KYC) exercise upon admission, which is followed up by a regular risk-based KYC process according to the specific admission criteria and the type of Participant. This process results in a review of the three pre-conditions to admission and the five admission criteria with the final aim of either confirming that a Participant continues to comply with the criteria or identifying non-compliance that can ultimately lead to exclusion from the Euroclear System.

Further, it aims to:

- identify and assess potential financial and non-financial risks arising from business relations with Participants and, if indicated, escalate these to take action
- regularly monitor certain issues that have affected individual Participants since the last review
- avoid damage to Euroclear's reputation and limit financial losses or liabilities deriving from external events that impact the Participants

In line with Euroclear Bank's risk-based approach, different types of sponsorship reviews are performed in parallel by different experts and at an agreed frequency as follows:

- the review of the financial resources and internal control and risk management is performed on all Participants on an annual basis
- the review of operational and technological capacity and the legal capacity is performed at a frequency depending on the type of Participant (ranges from yearly to every three years) and the possible source of operational risks these can cause
- the review of the Ethical standards criterion is performed at a frequency that varies according to the type of Participant and its AML/compliance risk profile (ranges from yearly to every three years)

The detailed analysis for each criterion triggers a score for the criteria (usually three possible values: sufficient, insufficient or watch).

The different sections of the sponsorship file containing the analysis, the documentation (including evidence) of the assessment and the scoring of the five criteria are completed by different departments and following the relevant governance (see below).

Aside from the above regular and comprehensive sponsorship review of existing Participants, several alerting mechanisms, such as adverse media information, are in place to react to specific events as soon as they occur or are detected.

Governance of the sponsorship process

The sponsorship process relies on the assessments performed by experts in each domain including Commercial, Legal, Risk Management, Compliance & Ethics and the Credit department. Depending on the assessment, the outcome of these reviews may flow through the GAC and further to the Euroclear Bank Management Committee for decision making on Participants for which assessment has revealed weaknesses.

The GAC regularly reviews the Participant profiles and their impact on the overall business portfolio; annually reviews Participants with insufficient scores of compliance with the admission criteria and recommends required actions to the Euroclear Bank Management Committee (for both sponsored and refused entities), if necessary and proposes possible changes to the admission strategy or process following regulatory, market or business developments.

The Euroclear Bank Management Committee is responsible for taking the decision to refuse or accept a Participant's sponsorship considering the GAC recommendation and, in case of refusal, for taking the decision to suspend or terminate the participation in the Euroclear System of the Participant.

Participant obligations

Euroclear Bank's Participants are contractually required to:

- notify Euroclear Bank in writing, with appropriate supporting documents, of any material event or change which may affect the information supplied by them as part of their application or which may affect their ability to comply with the criteria listed above
- comply with any request, which Euroclear Bank may reasonably make from time to time, for additional documentation which may evidence such continued compliance or to carry out additional tests in relation to their technical and operational capacity

Suspension and orderly exit

The *Terms & Conditions governing use of Euroclear*, which are publicly disclosed, state that Euroclear Bank may terminate the participation in the Euroclear System by giving at least 30 calendar days' notice, provided that Euroclear Bank may effect such termination upon notice effective immediately either if:

- any of the following events shall occur:
  - liquidation or bankruptcy or initiation of any proceedings with respect thereto
  - application for composition with Participant's creditors, whether in or out of court, or for deferment of its debts
  - attachment or execution upon or against any of the Participant's assets or property

- the Participant no longer meets any of the admission criteria set out in the *Operating Procedures of the Euroclear System* and continued participation in the Euroclear System could be materially prejudicial to the interests of the Euroclear System, Euroclear Bank or other Participants generally

Euroclear Bank details in its *Operating Procedures of the Euroclear System*, the consequences of any suspension or termination of the participation in the Euroclear System. Such rules primarily aim to minimise any disruption that a suspension or termination could have on other Participants or the Euroclear System generally.

For more details, please refer to Principle 13 KC 2.

Principle 19: Tiered Participation Arrangements

An FMI should identify, monitor, and manage the material risks to the FMI arising from tiered participation arrangements.

Key consideration (KC) 1: An FMI should ensure that its rules, procedures, and agreements allow it to gather basic information about indirect participation in order to identify, monitor, and manage any material risks to the FMI arising from such tiered participation arrangements.

Euroclear Bank has contractual relationships with its Participants only. Securities and cash accounts are opened in the name of the Participants and only Participants have entitlement to the securities and cash credited to those[51]. Credit lines are only granted to Participants and are fully collateralised (see Principles 4 & 5). As such, Euroclear Bank neither opens accounts with nor contractually recognises any indirect or tiered participations ('indirect participation').

Euroclear Bank owes a duty of redelivery or restitution of assets deposited by a Participant uniquely to that Participant or to its legal successor even if Euroclear Bank is aware that its Participant owes generally corresponding duties to its underlying clients.

Therefore, underlying clients of Participants do not create material operational or financial risks for Euroclear Bank. Nevertheless, disruptions in the activity of a large underlying client of a Participant could possibly affect the efficiency of settlement in the Euroclear System. Hence identifying these large underlying clients and ensuring that the concerned Participant have the adequate operational set-up in contingency situations is important.

The *Terms and Conditions governing use of Euroclear* explicitly allow Euroclear Bank to gather information on the underlying clients from all its Participants as part of its ongoing risk management, Sponsorship process (See Principle 18 for further details). Participants must comply with any request for additional information about their clients which Euroclear Bank may reasonably make for the purpose of identifying, monitoring and managing any material risks that they or their clients may cause to the Euroclear System, to Euroclear Bank or to other Participants generally.

Euroclear Bank's framework allows also to identify, monitor and mitigate risks from underlying clients of Participants to anticipate risks Participants may have on their underlying clients that could ultimately have repercussions on Euroclear Bank and the Euroclear System in general.

[51] *Except to the extent any cash or securities balance is posted as collateral in favour of Euroclear Bank.*

Euroclear Bank may receive information on the underlying clients of direct Participants via the following means:

- Account opening

  Participants may open several accounts and organise segregation as per their preference or requirements applicable to them. Account opening forms reflect whether the securities are:

  - proprietary securities via the opening of an 'own' account
  - or client securities via the opening of a client 'omnibus' account or client 'segregated' account

  Where a client account is segregated, Euroclear Bank's Participant has the obligation to disclose the identity of its underlying client as defined under applicable Anti-Money Laundering (AML) regulations, to enable Euroclear Bank to comply with its obligations under those regulations. This information is stored in the systems of Euroclear Bank.

  Where a client account is opened in omnibus form, the Participant is commingling the assets of several of its underlying clients. Euroclear Bank has a process in place to collect from its direct Participants:

  - the confirmation if they have in their omnibus account underlying clients whose volume or value of transactions are large relative to their own capacity
  - additional information on high-risk omnibus accounts as defined under the applicable AML regulations

- Key Participants

  Euroclear Bank has a framework in place to identify and monitor operational risks linked to Key Participants. It aims to:

  - identify its Key Participants on an ongoing basis
  - ensure that its rules, procedures and agreements allow it to gather relevant information about its Key Participants' underlying clients to manage material operational risks to the CSD arising from tiered participation arrangements. Such operational risks are managed in line with the *Corporate Risk Board Policy*
  - identify whether a Key Participants' underlying clients would be responsible for a significant proportion of transactions processed by the CSD

  The criteria to be considered a Key Participant (in the meaning of CSDR) are based on the following dimensions:

  - transaction volumes and values: as half of the activity in the Euroclear System is generated by a limited number of Participants, Euroclear Bank qualifies a Participant as a Key Participant if it belongs to that group of Participants
  - potential impact on other Participants and the Euroclear System as a whole in the event of an operational problem affecting the smooth provision of services by the CSD

Through a well-defined methodology, Euroclear Bank determines the inherent and residual operational risk each of its Key Participants may pose on Euroclear Bank using a number of risk factors that influence such operational risk.

Euroclear Bank performs an enhanced due diligence on the identified Key Participants using a risk-based methodology taking into account the residual risk of each Key Participant. This includes the detailed understanding of the operating model of each Key Participant[52], the review of the type of accounts held by the Key Participants and:

- in the case of a segregated account, based on the name of the individual account owner, Euroclear Bank assesses any risk of concentration across multiple direct Participants
- in the case of an omnibus account, Euroclear Bank identifies any concentration risk on a single underlying client behind the Participant's omnibus account

- Large accounts

Euroclear Bank has extended the operational risk assessment to a second group of Participants who own large accounts. These are also identified on the basis of their transactions value and number. The threshold is set as such that a large underlying client would need to appoint at least three custodians, all direct Participants of Euroclear, to potentially represent an activity equivalent to the one of a Key Participant if summing up its settlement activity through different custodians in Euroclear. The purpose is to identify any of their underlying clients which could be significant for Euroclear Bank.

For each Large account, Euroclear Bank identifies the type of account the direct Participant holds with Euroclear Bank and:

- in the case of a segregated account, based on the name of the individual account owner, Euroclear Bank assesses any risk of concentration across multiple direct Participants
- in the case of an omnibus account, Euroclear Bank identifies any concentration risk on a single underlying client behind the Participant's omnibus account

Applying a risk-based approach, Euroclear Bank performs an enhanced due diligence on the Participants owning the large accounts in a similar manner than on the Key Participants.

One of the requirements of Euroclear Bank's admission and ongoing monitoring of Participants (the Admission Process and the Sponsorship Process - see Principle 18), is for Participants to have *"appropriate internal control and risk management framework in place, commensurate with the risk profile, capital strength and business strategy of the company in order to preserve the integrity and reputation of the Euroclear System".*

[52] This includes the understanding of outsourcing or offshoring arrangements made by the Key Participant in addition to Power of Attorneys provided to third parties to operate the account on its behalf.

The outcome of the sponsorship process provides Euroclear Bank with the needed comfort that Participants adequately manage their activity.

Key consideration (KC) 2: An FMI should identify material dependencies between direct and indirect clients that might affect the FMI.

For both Key Participants and Large accounts, Euroclear Bank reviews every six months the activity levels, on the basis of the aggregated activity of the last 12 months, to identify whether there is a material concentration of activity with one or more of their Participants or a material change compared to the previous assessment. Based on the results, Euroclear Bank performs a number of identification and assessment duties (e.g. account type analysis, KYC reviews).

All other Euroclear Bank Participants are subject to a cyclical due diligence review ensuring that any risk a direct Participant could cause on Euroclear Bank (whether linked to underlying client or not) is identified, assessed, monitored and managed (please see Principle 18 for more details).

Key consideration (KC) 3: An FMI should identify indirect clients responsible for a significant proportion of transactions processed by the FMI and indirect clients whose transaction volumes or values are large relative to the capacity of the direct clients through which they access the FMI in order to manage the risks arising from these transactions.

Euroclear Bank identifies and monitors Key Participants and Large accounts i.e. those responsible for a significant portion of the transactions processed by Euroclear Bank. For these, material dependencies on large underlying clients are identified and monitored via Euroclear Bank's direct Participants, including concentration risk.

Key consideration (KC) 4: An FMI should regularly review risks arising from tiered participation arrangements and should take mitigating action when appropriate.

Although, as detailed in KC 1, it is understood that underlying clients of Participants do not create significant risks for Euroclear Bank, Euroclear Bank has developed a number of co-existing risk-based frameworks allowing it to assess any remote or unlikely risk linked to underlying clients of Participants and monitor them. As described above, an assessment is done every six months and the outcome is shared, reviewed and endorsed according to the standard Euroclear Bank governance for Participant admission and monitoring.

So far, the outcome of the assessments performed confirms that operational risks linked to underlying clients of Participants (including concentration risk) is remote for Euroclear Bank and appropriate measures are taken to monitor the few identified 'large underlying clients'.

Principle 20: FMI links

An FMI that establishes a link with one or more FMIs should identify, monitor and manage link-related risks.

Key consideration (KC) 1: Before entering into a link arrangement and on an ongoing basis once the link is established, an FMI should identify, monitor and manage all potential sources of risk arising from the link arrangement. Link arrangements should be designed such that each FMI is able to observe the other principles in this report.

Governance

Euroclear Bank has established a framework and governance for the set up and the maintenance of Euroclear Bank's CSD links, related network of counterparts, and their respective market environment. The Euroclear Bank Management Committee is accountable for the approval/ refusal of links and counterparts. The principles of the set up and maintenance of such links are described in the *Network Management Policy Handbook*, which is updated and reviewed periodically and is approved by the Euroclear Bank Management Committee.

The various types of links are as follows:

- Direct: a 'direct link' means a CSD link whereby Euroclear Bank becomes a Participant in the securities settlement system of another CSD under the same terms and conditions as applicable to any other Participant in the securities settlement system operated by the CSD
- Indirect: an 'indirect link' means an arrangement between Euroclear Bank and a third party other than a CSD that is a Participant in the securities settlement system of another CSD. Such link is set-up by Euroclear Bank in order to access the other CSD
- Interoperable: an 'interoperable link' means a CSD link whereby two CSDs agree to establish mutual technical solutions for settlement in the securities settlement systems that they operate. To date, Euroclear Bank only manages one interoperable link i.e. the Bridge with CBL.
- Relayed: a 'relayed link' means a CSD link whereby Euroclear Bank accesses a CSD through another CSD. Such arrangement is composed of: i) a direct link between Euroclear and a so called intermediary CSD and, ii) a direct or indirect link between the intermediary CSD and the so called relayed CSD

Process

Before setting up a new link, Euroclear Bank conducts a high-level risk assessment of the prospective link based on the market environment criteria. This risk assessment, called the pre-clearance process, assesses criteria such as credit risk, financial stability, compliance risk, legal and regulatory risk as well as operational risks linked to the political environment.

Based on the result of this risk assessment, Euroclear Bank Management Committee can approve or refuse the set-up of the prospective link.

If approved, the details of the future link are further assessed and developed.

The detailed assessment and subsequent maintenance of the link are conducted on two levels: at market environment level and on the contemplated counterparts[53] level. The detailed assessment of links and the counterparts involved, is made against Euroclear Bank's criteria in line with CSDR requirements.

These criteria apply to both the set up and the maintenance of the links afterwards.

- Market environment level:

  Set up of a new market

  Following the approval of the pre- clearance assessment, a detailed market risk assessment takes place, requiring positive assurance on a wide range of criteria including, amongst others, a good understanding of the local regulatory requirements, ownership restrictions, asset protection mechanisms with a focus on insolvency situations, tax implications, disclosure requirements, account structure, requirements around anti-money laundering and anti-terrorist financing, political stability and government effectiveness and economical and financial stability of the country.

  Based on the above assessment, a recommendation is submitted to the Euroclear Bank MC who is responsible for the approval of establishing new markets/links and for the appointment of counterparts[54].

[53] *While the Euroclear Bank Terms and Conditions refer to the generic concept of « depository », when referring to issuer CSD activity or investor CSD activity, Euroclear Bank uses a series of concepts which are regrouped here under the generic name of « counterparts ».*

[54] *The Head of Banking and Network is responsible for the appointment of a counterpart on an existing link whereby such appointment has limited impact and involves no material or significant change to the link set up itself*

Maintenance of a market

Once the market is set up, Euroclear Bank monitors on a continuous basis the compliance with the above set criteria and performs:

- a country risk assessment (i.e. continuous monitoring of compliance and ethical risks, macro-economic situation and financial risks, market initiatives and their impacts)
- an end-to-end risk assessment on links (including CSD links, confirming market practices, set up and flows, reassessing any counterparts, enforcement of contractual arrangement, business continuity processes and IT security measures)

- Counterpart level:

Prior to setting up a link with a new CSD or appointing a new counterpart, Euroclear Bank performs a rigorous risk assessment (including the custody risk aspect) on a number of criteria in line with CSDR. These criteria include requirements related to account structure, asset accessibility, compliance, legal, business continuity, and operational capacity amongst others.

Based on the outcome of this assessment, a recommendation is submitted to the Euroclear Bank Management Committee which is responsible for the approval of the appointment of counterparts (with the exception noted above).

Once the CSD link is established and the relevant counterparts appointed, Euroclear Bank monitors the compliance with the above-mentioned criteria on a continuous basis.

Selection of counterparts

The selection and (risk) assessment of any new counterpart is performed with the input from the different relevant internal stakeholders.

The selection and (risk) assessment are done through:

- a Request for proposal process, whereby the identified and short listed candidates are reviewed against Euroclear Bank's criteria in case of indirect link which include among others a strong local market presence with the ability to influence the development of the markets towards international investors, account structure, access to assets, anti-money laundering processes, financial strength, business continuity practices, operational and Straight Through Processing (STP) capacity and service quality requirements. The assessment against these criteria need to allow Euroclear Bank to comply with its regulatory obligations
- a due diligence visit of the selected candidate, prior to its appointment, in order to obtain evidence on the compliance of the entity with the above-mentioned criteria

The risk assessment is submitted for review to the Euroclear Bank ROC which issues a recommendation to the Euroclear Bank Management Committee for approval, the latter being accountable for the approval of CSD links and appointment of counterparts (with the exception noted above).

Monitoring of CSD link/ counterparts

Once the CSD link is established and the relevant counterparts appointed, Euroclear Bank has a monitoring framework and governance in place to ensure on-going compliance with the above-mentioned criteria to:

- identify and manage any changes in any of the selection criteria
- ensure that the counterpart(s) fulfil(s) its obligations on an ongoing basis towards Euroclear Bank

This monitoring is done through different processes:

- annual certification of contractual arrangements
- annual due diligence review and ad hoc on-site visit with a focus on obtaining evidence
- annual performance reviews to ensure that service levels are in line with Euroclear Bank requirements
- continuous monitoring of financial strength and creditworthiness
- CSD link review
- where applicable, annual vault inspections are performed

Should any material change be identified compared to the initial or last assessment, a formal review of the new or changing risks takes place to ensure appropriate governance depending on the type/level of such risks in accordance with the Risk Management Framework established by Euroclear Bank. For more details on the risk management framework, please refer to Principle 3.

Every year, all the CSD links and network of counterparts are reviewed and the outcome of such review is submitted to the Euroclear Bank Management Committee for re-approval of the existing links and counterparts.

Any material changes to the CSD links and counterparts are reported to the Euroclear Bank Board.

Key consideration (KC) 2: A link should have a well-founded legal basis, in all relevant jurisdictions, that supports its design and provides adequate protection to the FMIs involved in the link.

As part of the assessment described under KC 1, Euroclear Bank assesses the applicable local legal framework including elements amongst others: standard of care and liability undertaken by each of the parties, asset protection/insolvency proceedings and absence of encumbrances on assets, assets accessibility, securities/services review, confidentiality, data confidentiality and tax analysis. This assessment is reviewed on a regular basis to ensure changes in law are captured.

At individual links and counterparts’ level, Euroclear Bank ensures the establishment of a contractual arrangement with an unambiguous choice of law, clearly setting out the respective rights and obligations of all parties.

The contractual framework supporting the links includes all contractual documentation with all counterparts (the number of counterparts varies depending on the type of link, direct or indirect). These documents are governed by the laws of the jurisdiction where the counterparts are located. They cover elements such as representations made by the parties (such as the possibility for such parties to validly commit to the terms of the contract), terms and procedures for settlement, record keeping and safekeeping, insurance coverage, standard of care, liabilities of each party to the contract, confidentiality measures and data protection and operational service description, including eligible instruments.

For all links it maintains, Euroclear Bank obtains a legal opinion from a law firm with expertise in that jurisdiction, which covers the validity and enforceability of the contracts, asset protection and security eligibility matters amongst others. Revisions of contracts are performed when needed e.g. due to changes in local legislation or legislation applicable to Euroclear Bank, new instruments or services being added to the link, set up of the link being changed.

The legal and operational terms and conditions applicable in the context of the Bridge link are governed by the joint Euroclear-Clearstream Bridge Agreement which is governed by Luxembourg law.

Key consideration (KC) 3: Linked CSDs should measure, monitor, and manage the credit and liquidity risks arising from each other. Any credit extensions between CSDs should be covered fully with high-quality collateral and be subject to limits.

Euroclear Bank ensures it has sufficient liquidity (either directly or through the use of a settlement agent) to settle DVP instructions on the CSD links it maintains.

Euroclear Bank does not obtain credit from CSDs with which it establishes links.

Euroclear Bank does not grant credit to the CSDs that are Participant in the Euroclear System. If credit would be required, the CSD would have to meet the criteria and conditions for the granting of credit as described in Principle 4.

For the interoperable link Euroclear Bank maintains with CBL, called 'the Bridge', Euroclear Bank and CBL have credit exposures on each other, arising from the settlement and custody activity.

To cover the credit exposures Euroclear Bank and CBL have on each other, each of the CSDs has a Letter of Credit in favour of the other, backed by a syndicate of international banks. The Letter of Credit is renewed at least annually, taking into account the evolution of the Bridge activity. The Letter of Credit complies with article 16 of European Banking Authority (EBA) RTS[55] ("*Other equivalent financial resources for exposures in interoperable links*"). As such, it is considered to be equivalent to high-quality credit protection, complying with applicable regulatory requirements.

[55] *EBA regulatory technical standards 390/2017 supplementing CSD Regulation (EU) 909/2014*

In addition to the regulatory buffer foreseen under article 16 of EBA RTS, additional system-embedded buffers on the Letter of Credit were introduced, in order to strengthen the risk management on the Bridge.

Liquidity exposures on CBL are managed through the introduction of ex-ante controls, to ensure that Euroclear Bank's exposure over the Bridge, in a particular currency, does not exceed the qualifying liquid resources for that currency.

As measure of last resort in extreme circumstances, such as a CBL default scenario and as part of the contractual framework between Euroclear Bank and its Participants (documented in the *Operating Procedures of the Euroclear System),* Euroclear Bank has the right to reverse any cash credits to the Participants involved in Bridge transactions, in order to cover any unpaid amounts due by CBL. The debit is provisional, subject to the resolution of any claims towards CBL, including but not limited to the Letter of Credit, but can become final for the portion of the exposure that cannot be recovered. This mechanism has never been used to date.

Key consideration (KC) 4: Provisional transfers of securities between linked CSDs should be prohibited or, at a minimum, the retransfer of provisionally transferred securities should be prohibited prior to the transfer becoming final.

Provisional transfers of securities are not possible as Euroclear Bank only books securities once they have obtained final receipt of securities on its account in the local CSD.

An exception exists for Euroclear Bank's link with Depository Trust Company (DTC) in the United States, where newly-issued money market instruments are credited provisionally by DTC. Euroclear Bank prohibits the retransfer by blocking such securities in the Participants' accounts until the booking is final on Euroclear Bank's account in the local CSD[56].

Key consideration (KC) 5: An investor CSD should only establish a link with an issuer CSD if the arrangement provides a high level of protection for the rights of the investor CSD's clients.

The initial selection process for the opening of a CSD link is primarily based on the existence of a high level of protection of Participant's assets under the local market standards and legal framework (Please refer to KC 1 above).

Euroclear Bank obtains legal opinions that confirm among others that the local CSD's and, where applicable, the depository's creditors do not have a claim on Euroclear Bank's Participants' securities held at the local CSD or at the depository. Further details with regard to asset protection and custody risk are available in the sections covering Principle 1, 11 and 16.

[56] *Operating Procedures of the Euroclear System, Section 2.3 Entries in Participant Account and Online Market Guide – United States*

The contractual agreements include provisions aiming at the protection of Participants' assets (such as segregation of Euroclear Bank's Participants' assets from those of the depository or those of other clients/Participants of the depository, a prohibition of sub-deposits without prior approval by Euroclear Bank, and/or the existence of an insurance coverage for the securities held via the link).

To ensure a high level of protection, Euroclear Bank also ensures control processes are in place to reconcile on a daily basis with relevant counterpart depending on the type of link. This is done through receipt and validation of daily statement of balances and movements by Euroclear Bank.

With regards to the Bridge, Euroclear Bank performs daily reconciliation for securities and cash positions.

Key consideration (KC) 6: An investor CSD that uses an intermediary to operate a link with an issuer CSD should measure, monitor, and manage the additional risks (including custody, credit, legal, and operational risks) arising from the use of the intermediary.

All selection criteria for intermediaries used to operate a link are meant to avoid any risk, covering risks ranging from custody risk to financial, operational and reputational risk when selecting an intermediary and on an ongoing basis.

On a regular basis a re-approval report is provided to the Euroclear Bank Management Committee, highlighting any changes if any, and request the Euroclear Bank Management Committee to approve the current links Euroclear Bank has within its network.

Intermediaries must have a good reputation and be financially sound. They must comply with data protection and confidentiality, operational risk management, security measures and business continuity requirements. Other criteria include anti-money laundering requirements, operational readiness and service quality requirements.

Euroclear Bank has different tools to monitor and manage the risks during the lifecycle of a link through the link assessment framework which includes:

- global overview of all the CSD links and counterparts in the network
- Country Risk Dashboard monitoring compliance of the various risk assessment criteria
- annual due diligence which reviews the compliance of the CSD link and/or counterparts against the different set up/monitoring criteria
- annual certification of contractual arrangements
- market link review that includes an overview of all the market initiatives impacting the link
- daily reconciliation between Euroclear Bank and the counterpart, with Euroclear Bank requesting the counterpart to perform a reconciliation with the CSD

The liabilities of the counterparts are defined in their agreements with Euroclear Bank. Intermediaries are liable for losses caused by the non- or mis-performance of their duties and obligations and the holding of securities by it or with the CSD, subject to the usual force majeure clauses and other limitation of liability clauses.

KC 20.7, 20.8 and 20.9 are not applicable to Euroclear Bank

Principle 21: Efficiency and effectiveness

An FMI should be efficient and effective in meeting the requirements of its Participants and the markets it serves.

Key consideration (KC) 1: An FMI should be designed to meet the needs of its participants and the markets it serves, in particular, with regard to choice of a clearing and settlement arrangement; operating structure; scope of products cleared, settled, or recorded; and use of technology and procedures.

Euroclear Bank's offer constantly evolves to meet its Participants' needs. Examples include the roll-out of the web-based communication channel EasyWay replacing the legacy EUCLID system and extending the scope of Taskize as a communication channel to support a collaborative client service approach or, more recently, by responding to market trends towards central bank money settlement by signing the TARGET2-Securities (T2S) Framework Agreement in December 2021. As part of its monitoring of goals and objectives, Euroclear Bank also follows up generic objectives, e.g. adherence to agreed budgets, maintaining/improving the control environment (both on internal activities and activities outsourced).

Euroclear Bank's User Committee and its role

Euroclear Bank has a User Committee, which is a body that forms part of the internal governance of Euroclear Bank. Its objective is to voice the opinions of the several Participants' groups, as per the mandate the User Committee received in line with regulatory requirements. To ensure that the suggestions of the User Committee accounts for the variety of Participants in the Euroclear Bank's system, the committee's membership reflects Euroclear Bank's client base, and it is composed of representatives of the main relevant markets segments.

Its purpose is to possibly:

- provide independent advice to Euroclear Bank's Board on key arrangements that impact Euroclear Bank's members (including criteria for accepting issuers and Participants; service level; review and/or testing of the default procedures of Euroclear Bank)
- provide non-binding opinions to Euroclear Bank's Board on pricing structure
- make request for implementation of new Delivery versus Payment (DVP) settlement through links

To support them providing independent advice to the Board on Euroclear Bank's service level, the User Committee is regularly informed of the performance of the Euroclear System, as well as audit findings relating to the topics covered by its mandate.

Participants' surveys

Feedback from Euroclear Bank's users is collected and evaluated yearly via the annual Client Survey, open to all Euroclear Bank Participants. This survey enables Euroclear Bank to periodically assess the level of satisfaction and needs of Participants for the various existing services offered by Euroclear Bank. This is complemented by regular reviews throughout the year, i.e. limited scope surveys where clients assess the quality of Euroclear Bank's services.

Based on this feedback, Euroclear Bank assesses the market's need for further key service enhancements that may be introduced over the next months and years.

Other initiatives

To understand the needs of Participants and their evolution, Euroclear Bank performs regular competition analysis, and follows up on market developments and product/service evolution through the review of press articles and specialised publications, their presence in various conferences and round tables and ad-hoc consultation with Participants and market players. These actions are key triggers to support the conception and the development of Euroclear Bank's business strategy.

Euroclear Bank is also a member of a series of advisory groups in the financial and post- trade industry. It enables Euroclear Bank to adapt to market evolution and to the needs of its Participants. Euroclear Bank answers to consultations on regulatory evolutions that can impact Euroclear Bank and the services it offers to its Participants.

Key consideration (KC) 2: An FMI should have clearly defined goals and objectives that are measurable and achievable, such as in the areas of minimum service levels, risk-management expectations, and business priorities.

Mission statement

Euroclear Bank's mission statement sets clear goals and general objectives to meet the requirements of Euroclear Bank's Participants. The mission statement (publicly available www.euroclear.com) is to:

- support an open marketplace where scale and connectivity across the spectrum of market Participants are competitive strengths
- support market stability, deliver shared economies of scale and develop markets locally and globally
- serve the public good by ensuring the efficiency of markets and actively enabling the reduction of risk
- encourage a high performing culture that respects Euroclear Bank's corporate values through its diverse and dedicated workforce worldwide

Corporate objectives and the Positive Assurance Report

Euroclear Bank's corporate objectives provide high level qualitative targets setting up the business priorities. These objectives are assessed semi-annually by the Euroclear Bank Management Committee and Board.

The Positive Assurance Report (PAR) reflects Euroclear Bank's corporate objectives and the associated risks and controls and covers all parts of the organisation including those functions that are outsourced to ESA.

The PAR being a key component of Euroclear Bank's Risk Management Framework, it is further discussed in other sections of this document including Principle 3 (Risk Management Framework), Principle 15 (General Business Risk), Principle 17 (Operational Risk).

Euroclear Bank's KPIs

Operational performance is measured through the Business Performance Report, which is produced and validated by business owners and shared with Euroclear Bank Operations Management every quarter. Banking and Network Management performance is also regularly reported to and reviewed by Euroclear Bank Management.

With respect to all support functions (including Risk Management), service levels and measurable KPIs have been identified and are monitored quarterly, with the outcome reviewed by the ROC and MC.

In case a KPI is missed, the business owner investigates the root cause and defines an action plan.

In case material issues are detected (e.g. system incidents), immediate escalation occurs involving senior business managers, IT representatives and other stakeholders, and immediate actions are taken. These cases are also reported to the ROC and include post-mortem assessment and remediation plans.

These KPIs are consistent with the Euroclear Bank objectives that are set by the Board of Directors, on an annual basis (referred to as the 'CEO and MC Objectives'; cf Principle 2 above), and they are monitored and reviewed quarterly by the ROC and the Euroclear Bank Management Committee, where action plans and remediation are also discussed.

Example: IT Performance

Euroclear monitors a large set of IT KPIs for its different businesses, covering among others:

- the availability (uptime) of the systems
- the ability to meet deadlines
- the overall performance of the systems

The KPIs for key systems are set by the start of each year, daily checked, monitored monthly and discussed with management quarterly.

Key consideration (KC) 3: An FMI should have established mechanisms for the regular review of its efficiency and effectiveness.

The efficiency and effectiveness are measured at different levels. The high-level objectives for the Management Committee and CEO are approved by the Euroclear Bank Board at the start of the year, and progress toward achieving the objectives assessed by the Board twice during the year.

All support divisions that are relevant for the efficiency and effectiveness of Euroclear Bank have identified KPIs which are tailored to their specific functions (e.g. IT departments monitor system performance, availability and deadline indicators, Finance monitors invoice processes, Legal monitors their capability to provide timely legal advice). Euroclear Bank's CEO and his direct reports evaluate on a quarterly basis the efficiency and effectiveness across all operations and across the support activities based on these KPIs as well as a qualitative assessment of the services received. On an annual basis, these KPIs are reviewed for their relevance among other as part of the service delivery plans the divisions of ESA prepare as service provider for other group entities, including Euroclear Bank.

An evaluation by Participants is done every year during the annual Client Survey mentioned above and includes a full-scope review of Participants' feedback with respect to all aspects of services provided. The Euroclear Bank User Committee also enables users of Euroclear Bank to voice client feedback on the efficiency and effectiveness of the CSD's processes via formal advice to the Euroclear Bank Board of Directors.

Principle 22: Communication procedures and standards

An FMI should use, or at a minimum accommodate, relevant internationally accepted communication procedures and standards in order to facilitate efficient payment, clearing, settlement, and recording.

Key consideration (KC) 1: An FMI should use, or at a minimum accommodate, internationally accepted communication procedures and standards.

Euroclear Bank uses internationally accepted procedures and standards for communicating with Participants and other parties.

Interaction between Euroclear Bank and its Participants is either application-to-application (i.e. STP communication solutions) or user-to-application (i.e. screens). International standards are used in both but are – for integration purposes – more relevant or needed for the application-to-application channels.

This fully automated interaction on application-to-application channels is possible today in International Organization for Standardization (ISO) standards and proprietary formats. Euroclear Bank continues to invest in ISO standard automated communication, it does so through the yearly SWIFT releases (thus adopting the most recent ISO changes relevant to Euroclear Bank's business) and by ensuring that new products and evolutions of existing products use the appropriate ISO standards.

Asset servicing

In the area of asset servicing, ISO 15022 and ISO 2022 standards are available (ISO 20022 is used for general meetings and shareholder identification only, ISO 15022 is supported for all corporate actions). Euroclear Bank has invested over the last few years to increase compliance with the Securities Market Practice Group (SMPG) market practices and it will continue to do so. Euroclear Bank intends to use the new ISO 20022 standards, when required by the Participant community or other key stakeholders (e.g., Eurosystem).

Securities identification

Euroclear Bank uses the International Security Identifier Number (ISIN) code to identify financial instruments. Participants can use the ISIN to instruct and receive reporting with the ISIN if they wish. In addition, the Common Code (a securities identification code shared by Euroclear Bank and CBL) is used to identify securities.

Settlement

In the area of settlement, ISO 15022 standards are available, in addition to legacy support on ISO 7775. These standards are applied both for internal and external settlement (at other CSDs, through direct or indirect links). Additional standardisation within settlement instruction and reporting is achieved through the use of the Bank Identifier Code (BIC) to identify a counterparty.

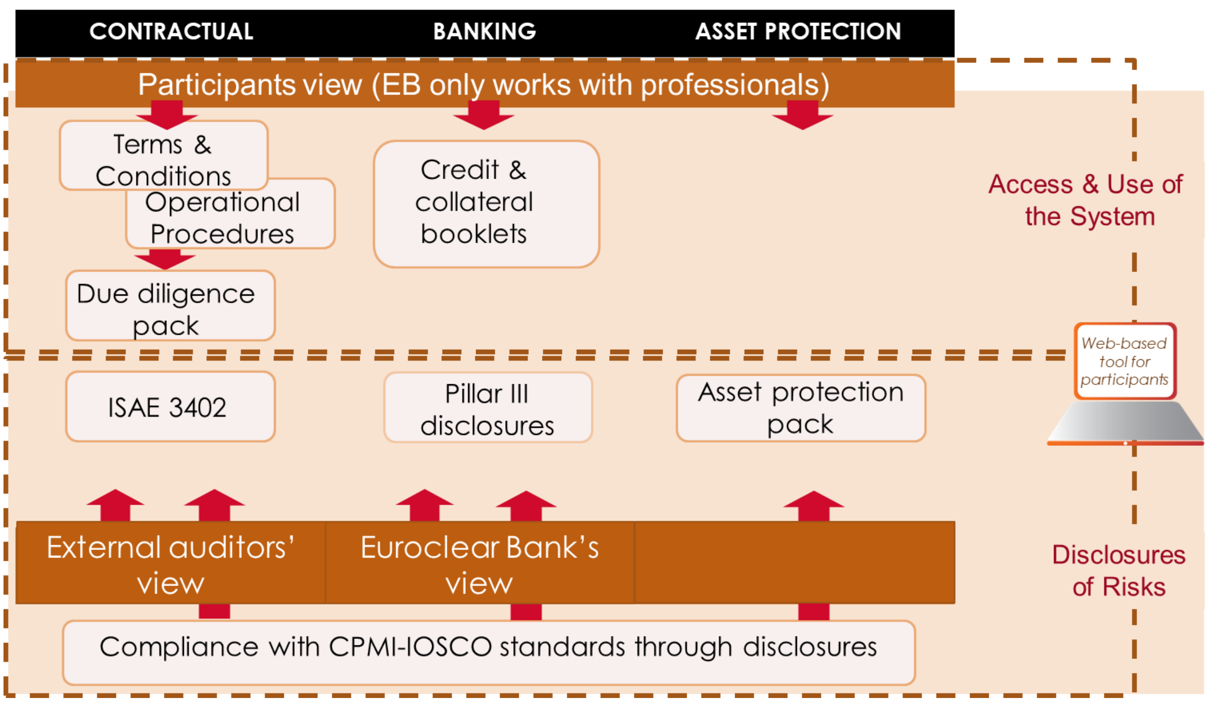
Another possibility is a five-digit Euroclear Bank code corresponding to a local counterparty as identified in the Euroclear Bank online counterparties database available via my.euroclear.com > Counterparties.

Principle 23: Disclosure of rules, key procedures, and market data

An FMI should have clear and comprehensive rules and procedures and should provide sufficient information to enable clients to have an accurate understanding of the risks, fees, and other material costs they incur by participating in the FMI. All relevant rules and key procedures should be publicly disclosed.

Key consideration (KC) 1: An FMI should adopt clear and comprehensive rules and procedures that are fully disclosed to clients. Relevant rules and key procedures should also be publicly disclosed.

The structure of Euroclear Bank's public disclosures can be summarised by the following exhibit:



The rules of the Euroclear System operated by Euroclear Bank are documented in the Terms and Conditions which are made of two documents:

- the *Terms and Conditions governing use of Euroclear*, containing the description of the key rights and obligations of Euroclear Bank and the Participants, when using the Euroclear System
- the *Operating Procedures of the Euroclear System* which provide additional details among others with regard to the requirements for becoming a Participant, the functioning of the Euroclear System, the rights and responsibilities of Participants, the connectivity to and from the Euroclear Platform and the functioning of Euroclear Bank's various services

We elaborate on other contractual documentation in the section covering Principle 1 (Legal Basis).

The Terms and Conditions are available on my.euroclear.com (login and passwords are provided upon request) and detail among other:

- the rules for amending the contractual documentation
- admission rules
- suspension and termination events, including the procedural aspects thereof
- the standard of care applied by Euroclear Bank and the related liability
- rules in case of loss of securities
- rules in case of default of a Participant (including insolvency proceedings affecting a Participant) in the Euroclear System
- exceptional measures available to Euroclear Bank in case of default of CBL ('right to debit')
- exceptional measures available to Euroclear Bank in case of unforeseen liquidity shortfall in a stress situation

The Terms and Conditions contain dedicated sections on the rights and responsibilities of Participants and of Euroclear Bank respectively.

The readability as a whole is ensured through the use of plain language.

Euroclear Bank manages two distinct websites to inform the general public and its Participants:

- euroclear.com – the corporate website
- my.euroclear.com – the operational knowledge portal

Euroclear Bank also publishes on its website a set of important documents to provide deeper information on its services and potential risks borne by the Participant including among other:

- the Due diligence pack which elaborates on the due diligence checks performed on third parties
- ISAE 3402 report, that provides substantive information on the operation of controls and procedures implemented at Euroclear Bank along the ISAE 3402 standard

- Pillar 3 disclosures, that provide substantive information on risk management methods and practices, and the organisation of the risk management function at Euroclear Bank, as well as among other things, the actual data relating to exposures and associated capital requirements. Pillar 3 disclosures obey the requirements set in the European Capital Requirements Regulation (CRR)
- Asset protection pack regarding the protection of the holdings in financial instruments of the clients in the books of Euroclear Bank, as well as, in the books of the Euroclear Bank counterparts or CSDs for the links it maintains
- CPMI-IOSCO Disclosure Framework

Euroclear Bank User Committee meetings' minutes providing additional information on the topics discussed at the User Committee.

Key consideration (KC) 2: An FMI should disclose clear descriptions of the system's design and operations, as well as the FMI's and clients' rights and obligations, so that clients can assess the risks they would incur by participating in the FMI.

www.euroclear.com contains high-level information about the system's design and operations:

- the About us section provides a general description of Euroclear Bank's business, mission, Participants, structure, history and rules
- in the Services section, Participants can find relevant information about the various services

More detailed information about these services can be easily retrieved through the Euroclear Knowledge base on my.euroclear.com (e.g. on Collateral Management, an overview of all operational, tariff and legal documentation).

These documents, among others, complement the Terms and Conditions and give the Participants a view on the design and operations of the specific services. The *Euroclear Bank CPMI-IOSCO Disclosure Framework* also provides useful information about Euroclear Bank's operations.

The degree of discretion that Euroclear Bank has in applying the *Terms and Conditions governing use of Euroclear* and *Operating Procedures of the Euroclear System* are specified in those two documents.

The Euroclear Bank User Committee forms part of the organisational arrangements aiming at maintaining a dialogue between the FMI and its users on a series of topics, including access, service level, relevant audit findings and efficiency of the System.

Key consideration (KC) 3: An FMI should provide all necessary and appropriate documentation and training to facilitate clients' understanding of the FMI's rules and procedures and the risks they face from participating in the FMI.

New Participants receive a 'Welcome Pack', including the *Operating Procedures of the Euroclear System* that provides a complete set of information allowing them to understand Euroclear Bank's rules and procedures.

As mentioned on the website, Euroclear Bank offers various training options to help Participants get the best out of its range of products and services:

- local courses
- online training
- e-Learning
- on-site visit

This is complemented by regular Newsletters, brochures and other material published regarding specific topics. For example, operational Newsflashes are published on the website regularly, available to Participants only via the password-protected part of the website.

Registered Participant subscribers to these Newsflashes also receive emails to alert them of the newsflash. To promote adequate understanding of its rules and procedures as well as the risk they may face from participating in the FMI, Euroclear Bank provides training to the Participants either bilaterally or collectively (including the training options and documents mentioned in Euroclear Bank's Welcome Pack).

Relationship Management and the Users Committee allow Euroclear Bank's Participants to raise any concern and at the same time allows Euroclear to ensure the Participants understand the content of the documents they sign and the risks they face. Should Euroclear Bank notice a lack of understanding with a Participant, it will provide additional training.

Key consideration (KC) 4: An FMI should publicly disclose its fees at the level of individual services it offers as well as its policies on any available discounts. The FMI should provide clear descriptions of priced services for comparability purposes.

Euroclear Bank tariff information is publicly available on www.euroclear.com (Menu > Our group > Euroclear Bank > Our tariff)

The brochures set out the fees that are charged for the services provided by Euroclear Bank and, where relevant, the applied volume discounts. Price examples are provided to help clients reconciling invoices with the published tariff.

In its tariff brochures, Euroclear Bank publishes the applicable fee for each type of service, including for core services referred to in Section A of the Annex of CSDR in relation to a securities issue and for ancillary services referred to in Section B of the same Annex. It facilitates the comparison of offers and allows clients to anticipate the price they shall have to pay for the use of services.

Euroclear Bank will update its tariff brochures before the implementation of a tariff change. Euroclear Bank aims, as a matter of good practice, to publish the tariff change at least 10 business days in advance. Updates of tariff brochure are announced through newsflash published on the website and sent by emails to registered clients. Depending on the nature, magnitude and topic of the tariff change, Euroclear Bank may elect to further inform its clients through Newsletters and User Committee. This is a judgment call rather than a set procedure.

Key consideration (KC) 5: An FMI should complete regularly and disclose publicly responses to the CPSS-IOSCO Disclosure framework for financial market infrastructures. An FMI also should, at a minimum, disclose basic data on transaction volumes and values.

Euroclear Bank publishes an updated Disclosure Framework on a regular basis.

Euroclear Bank discloses material information on the company itself and the services it provides to Participants, predominantly available through its digital channels. Such information includes high level overviews, updates on new service developments or relevant market news, as well as detailed descriptions of its services, procedures and the rights and obligations of Participants. The information is updated on a regular and timely basis.

Euroclear Bank also discloses risk management information such as the CRR Pillar 3 disclosures and information on Euroclear's business continuity. We elaborated on the disclosed information available online in KC 1 above.

Statistical data is published regularly (quarterly) on www.euroclear.com comprising statistics on turnover, collateral management and assets under custody, in addition to statistical information provided to supervisors.

The media will vary according to the nature, magnitude and significance of the information. At a minimum, the information will be disclosed in a Newsletter, posted on the website and an alert sent to registered Participants and users by email to announce the availability of new information. Some brochures also exist in paper format.

Euroclear Bank may also use other media that are more promotional in nature, but still have a role to play in disclosure. These media include:

- press releases (as part of a communications plan to support the business. Articles with 'news value' (e.g. on new or expanded services, operating results or tariff reductions) may appear in the financial trade press and/or on www.euroclear.com)
- social media
- adverts
- commercial presentations
- speeches at industry events
- videos/banners on the website and elsewhere
- marketing brochures (in electronic and in paper format)
- internal communications channels

All information mentioned in this Principle is available in English.